

The Scope of Learning Alliances as a Mechanism for More Innovative Urban Water Management

A thesis submitted in partial fulfilment of the requirements of the
University of Greenwich for the degree of Doctor of Philosophy

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October 2017



Declaration

I certify that the work contained in this thesis, or any part of it, has not been accepted in substance for any previous degree awarded to me, and is not concurrently being submitted for any degree other than that of Doctor of Philosophy being studied at the University of Greenwich. I also declare that this work is the result of my own investigations, except where otherwise identified by references and that the contents are not the outcome of any form of research misconduct.

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List of Acronyms

AVRL	Aqua Vitens Rand Limited
BMPs	Best Management Practices
CBO	Community-Based Organisation
CIWEM	Chartered Institution of Water and Environmental Management
COPs	Communities of Practice
CSIR	Council for Scientific and Industrial Research
DEFRA	Department for Environment Food & Rural Affairs
DP	Development Partners
EU	European Union
GWCL	Ghana Water Company Limited
IAR4D	Integrated Agricultural Research for Development
ICLEI	Local Governments for Sustainability, (originally the International Council for Local Environmental Initiatives)
IRC	IRC International Water and Sanitation Centre (now known simply as IRC)
IUWM	Integrated Urban Water Management
IWM	Integrated Water Management
IWRM	Integrated Water Resources Management
KNUST	Kwame Nkrumah University of Science and Technology
LA	Learning Alliance
MMDA	Metropolitan, Municipal and District Assembly
MSP	Multi-Stakeholder Platform
NGOs	Non-Governmental Organisations
NRI	Natural Resources Institute (University of Greenwich)
RIDA	Resources, Infrastructure, Demand and Access

SLIM	Social Learning for the Integrated Management and sustainable use of water at catchment scale
STEPRI	Science, Technology Policy Research Institute (of CSIR)
SUDS	Sustainable Urban Drainage Systems
SUWM	Sustainable Urban Water Management
SWITCH	Sustainable Water management Improves Tomorrow's Cities' Health
UNEP	United Nations Environment Programme
WASH	Water, Sanitation and Hygiene
WRC	Water Resources Commission
WRI	Water Research Institute (of CSIR)

Acknowledgements

I wish to thank my supervisors Adrienne Martin, Alistair Sutherland and Richard Lamboll. There is so much to thank them for. They have been very supportive of me in every way. They have provided the relevant guidance for this work – reading and re-reading long drafts, reviewing the work to ensure a high standard of work is produced. They also gave useful feedback and insightful comments on my work while engaging me in new ideas to improve the work. Beyond the academic work, they have assisted and encouraged me in so many ways. They have been a family away from home and I could always count on them. I am grateful for the opportunity of knowing them and working with them. It has been a real honour. I am also grateful for the support from staff at NRI who have always helped me when I needed anything, particularly Caroline Troy; many thanks. In addition, I wish to thank Katy Oliver and Heather Mcavoy-Marshall.

I acknowledge the funding sources that made my Ph.D. research possible. Funding was provided through the SWITCH EU-FP 6 Project and the Natural Resources Institute (NRI) at the University of Greenwich. I wish to thank SWITCH Researchers and Learning Alliance members both in Accra and Birmingham for granting interviews for the research. In Accra, I am grateful to Olufunke Cofie. In Birmingham I am particularly grateful to Phil Sharp, Rae Mackay, Jennifer Laight and Geoff Denham. I'm also grateful to Carol Howe, the SWITCH project manager and other SWITCH members who supported this work.

To my family back home, particularly my mother (Agnes Boateng) who has been a constant in my life– my biggest cheerleader and encourager, who always constantly reminded me, “you have work to do”; even when she didn't feel well she would sit with me through nights of working. I know the completion of this thesis will make you happy; thank you so much. I am also grateful to my father (Thomas Darteh) and other family members and friends (especially Dr. Ohene Sarfo, Marieke Adank and Gloria Ayirebi) who have supported me along the way.

Special thanks to my mentors, Esi Awuah and Mawuena Dotse for the encouragement given to me. I thank Rev. T.B. Dankwah for praying with me and encouraging me through challenging times; it has all been by the grace of God.

ABSTRACT

The topic of this study is “The scope of Learning Alliances as a mechanism for more innovative urban water management”. Urban water management presents complex and multi-dimensional problems for which solutions must consider the institutional, socio-economic and governance contexts. SWITCH (2006-2011), an EU-sponsored research project, used a multi-stakeholder approach known as ‘learning alliance (LA)’ to promote innovations in Integrated Urban Water Management (IUWM) in 12 global cities. Qualitative case studies were undertaken in Accra and Birmingham to develop an understanding of the processes and emerging change that resulted from applying the LA approach in urban water management. The overarching research question was “How and to what extent can learning alliances stimulate, influence and promote individual and institutional change for innovation; as applied in IUWM?” Analysis of experience and outcomes was undertaken in relation to interactions and collaborations, social learning, innovations and governance.

Key findings indicate that LAs were able to stimulate learning, leading to innovations in IUWM policy and practice. The LA created an open space for discourse and joint decision making between stakeholders in both formal and informal structures and involved marginalised groups as well as researchers. This reduced conflicts and promoted a more collaborative approach through which stakeholders built consensus. Power relations need to be managed and the role of facilitator was critical in managing and building trust which is a key element of the LA process. LAs provided a space for networking and co-creation of knowledge that was useful to stakeholders, resulting in changed perspectives of stakeholders on IUWM based on the wider acceptability and legitimacy of research results. Immediate changes were more pronounced at the individual level, but led to collective transformation within the learning alliance based on shared goals. Significant contributions to project planning and changes in organisational structures represented changes at sector level scale. While the formal process of the learning alliance did not continue beyond the project, the relationships and processes developed as a result of the interactions and collaborations continue.

1 Introduction

1.1 Background

The sustainable management of water resources presents a resource dilemma which managers of the resources have to contend with (SLIM, 2004a). This is perhaps due to the complex nature of the resource and the multiple issues which need to be addressed in managing water. A typical example of this complexity is Urban Water Management in which the solution to a problem in part of the system may create new problems elsewhere for others (Rittel and Webber, 1973; Pacanowski, 1995; Butterworth and Morris, 2007). This concept of system interconnectedness and the need to deal holistically with multiple issues, challenges the conventional system of managing water, with its centralized and highly technical approach dating from the 19th century, ‘whereby water supply, sewage and stormwater are controlled and managed separately through linear, engineered systems’ (Brown and Farrelly, 2008, p2). It is now accepted that conventional urban water management, which has been one of the wonders of the 19th century industrial world, is struggling to manage ever scarcer water resources to deliver water and sanitation services and dispose of wastewater without adversely impacting the quality of life of urban populations and the downstream environment (Butterworth and Morris, 2005). It is deemed not to be sustainable (Guio-Torres, 2006).

The challenge to finding sustainable solutions – technical, environmental, economic, social and institutional - to these underlying problems is beyond the realm of conventional research approaches and requires a new paradigm. It has been recognised that innovation needs to occur in a system that captures the political and institutional challenges in urban water management as these are frequently the most difficult challenges to the uptake of innovation (Butterworth and Morris, 2007). Recent approaches to improving the impact of research and development place greater emphasis on the rapidly changing socio-economic, political and environmental contexts, and on the importance of a diversity of key actors and organizations in effecting an innovative environment and facilitating scaling-up. Accordingly, the focus has switched from a perception of knowledge and knowledge generation as being exclusively the product of research and technological innovation, to one in which the processes of knowledge acquisition and application by knowledge managers and users are uppermost, with the linkages and learning dispositions of these

players being viewed as the key to development impact (organisational innovation or systems innovation) (Butterworth and Morris, 2007).

The Sustainable Water management Improves Tomorrow's Cities' Health Project, SWITCH (2006-2011) was a large-scale EU funded Project aimed at operationalising this paradigm shift in urban water management using learning alliances in 12 demonstration cities around the world. This study examines the theoretical underpinnings of learning alliances and assesses the implementation of the learning alliance in practice. It also examines stakeholder views of the whole process vis à vis their role and any benefits they accrue in such a process and the extent to which it leads to learning and innovation in urban water management.

1.2 Objective and Research Questions

Learning Alliances are being used as a vehicle to promote learning and innovation towards more integrated and sustainable water management. According to Moulaert and Hamdouch (2006), analysis of innovations involves a dynamic approach in which innovations are analysed as a process. From this viewpoint, the process approach, innovation and learning outcomes are key factors that are assessed. Interactive learning is also about governance (SLIM, 2004a). The processes that take place in a learning alliance are influenced by the governance structure within which they are situated (Pahl-Wostl *et al*, 2008). Similarly, in this study the learning alliance process is described and analysed in the context of the institutional set up within which it occurs. This allows the study to also capture the “culture” of innovations as proposed by Moulaert and Hamdouch (2006).

Within the SWITCH project in which the learning alliance was studied, there was an implicit project assumption that stakeholders are interested in working together for change, or belong to organisations that want to work together to achieve Integrated Urban Water Management. This implicit assumption is stated as a theory of change which is examined in this study. “Given the right socio-cultural and institutional factors, continuous interaction of stakeholders will lead to learning and innovation (sharing of knowledge, generation of new knowledge and application of knowledge) which results in a change in knowledge, attitudes and practices of stakeholders”.

The research question to be answered is: **How and to what extent can learning alliances stimulate, influence and promote individual and institutional change for innovation; as applied in integrated urban water management (IUWM)?**

The sub-research questions are:

1. How can the learning and innovation processes of city learning alliances centred on Integrated Urban Water Management and Governance be described and analysed?
2. How does learning occur and to what extent does it go beyond the LA platform within a city to influence change and innovation in IUWM?
3. How do the social and institutional dynamics of urban water governance relate to innovation in urban water management?

1.3 Justification

The inability of technical end-of-pipe solutions to deal adequately with uncertainties has led to calls for a paradigm shift towards more sustainable water management. The general and current concepts of sustainable development highlight the need for linking the different dimensions of such development (Hawkins et al, 2009). This has been applied in the agricultural sector and such concepts can be extended to water management since both have similar characteristics of complexity associated with natural resources management. The implementation of such a concept in practice is however poorly understood (Bos *et al*, 2011). Experience has shown that social transformations through learning can provide a direction towards sustainable urban water management. For example, in Australia there is an increased understanding that social learning processes are needed for a transition to sustainable urban water management (Pahl-Wostl *et al.*, 2008; Brown, 2008; Bos *et al*, 2011). This is supported by the growing body of literature that identifies social learning as a critical factor for overcoming system lock-in and improving existing socio-technical systems for managing water (Bos *et al*, 2011). The use of social learning has assumed a position of growing importance in the management of natural resources and thus there is a need for further understanding of these processes (Pahl-Wostl *et al*, 2008).

Similarly, governance perspectives place greater emphasis on social learning as a key aspect of developing policy (Pahl-Wostl *et al*, 2008). This has led to the development of

these new institutions¹ (such as learning alliances) which use social learning principles to engage stakeholders as a means of improving governance for more sustainable water management. There are calls for more ‘governance experimentation’ on improving these informal societal networks which are seen as the vehicle for implementing concepts of sustainability in water management (Bos *et al*, 2011). ‘While such governance experimentation is recognised as an essential vehicle for social learning, there is limited scientific understanding of how and to what extent such a mechanism actually generates social learning’, (Bos *et al*, 2011, p1). Some researchers contest the fact that social learning actually occurs within the various projects aimed at addressing sustainable water management (Reed *et al*, 2010; Bos *et al*, 2011). This makes a study of such a project relevant to the discourse on social learning scholarship and its application in stakeholder learning-oriented projects.

Hoverman *et al* (2011), point out that the majority of studies that look at social learning in natural resources management have focused mainly on developed countries, particularly those in Europe, with very few studies reflecting on the challenges and opportunities of “creating successful social learning programmes in developing countries”. Secondly, these studies mostly focus on the events that happen, with little understanding of the actors’ personal experiences and the significance of what actors have learned through taking part in such a collaborative process.

Such a study will therefore contribute immensely to a better understanding of the processes and conditions that affect learning and, by extension, innovation in governance, within a particular social context; using examples from both developed and developing countries. An appreciation of the perspectives of stakeholders will provide ‘insight into specific processes through which social learning occurs’ and thus help to ‘design future governance experiments’ (Bos *et al*, 2011).

In a review of literature on innovation, Van de Ven and Poole (1990) indicate that while many studies have examined the antecedents to, or consequences of innovation, very few have directly examined how and why innovations emerge, develop, grow, or come to an end over time. Even though the literature review was mainly on technical innovation, the

¹ Institutions are defined as “*as systems of established and prevalent social rules that structure social interactions*” Hodgson (2006, pp2)

observation can be extended to other forms of innovation where the process by which innovation actually occurs is not well known.

Van de Ven and Poole (1990), note that appreciating the chronology of events is fundamental to managing the innovation process and that managers of such a process should be aware of the fact that it takes more than input factors to achieve innovation outcomes. They describe the process as a 'black box' between input and outcomes and state that managers of innovation need to understand how and why things go the way they do in the innovation journey. This study attempts to create that map by moving along the innovation pathway, picking up signs and mapping them.

A deeper understanding of the process and effectiveness of tools will also help to make future interventions through such processes more effective. Green (2007a) indicates that sustainable urban water management is about doing 'better' where doing 'better' requires the invention and adoption of 'better' options for managing water and being more successful in implementing them.

The results of this study of learning alliances give a detailed description of the process and an analysis of the performance of LAs within city contexts. The study aimed to test theories on innovations relating to governance and institutional change and come up with lessons for social and institutional dynamics in urban water innovation and governance. These results are expected to contribute to increased knowledge in the use of multi-stakeholder platforms in the water sector.

The knowledge generated will contribute to understanding the LA process and the role of stakeholder engagement in resource management. It will help to identify environments that promote or support stakeholder engagement and the constraints to stakeholder processes. Knowledge generated will further contribute to an understanding of issues relating to initiation of LAs and mechanisms for process facilitation of LAs (and Multi-stakeholder platforms (MSPs), and the change factors within the LA due to stakeholder dynamics, comparing two cities using the same process, but under different conditions.

1.4 Approach and Methodology

This research employs a case study approach in which the researcher was an active participant in the process. Yin (2003) suggests that one of the applications of a case study

approach is for the study of a contemporary phenomenon within its real-life context. The focus is on contemporary events, and the experience of the actors is important. The learning alliance at the time of study fits the description of a contemporary phenomenon. The methodology involved developing a conceptual framework based on learning and innovation theories. This conceptual framework provided the basis on which data was collected. The SWITCH Project Learning Alliances within which the researcher worked, provided the channels to access data that was needed to answer the research questions. The learning alliance in Accra, one of the SWITCH Cities, was selected as the main focus of data collection and analysis, supported with data collected from other participants in other cities. Data was collected through a variety of sources and validated. The research process can be summed up as follows:

1. Literature Review and Development of Conceptual Framework
2. Description of Learning Alliances and theoretical underpinnings
3. Documentation of SWITCH City Learning Alliance Process
4. Interview of Key Learning Alliance Members and researchers
5. Participant Observations in learning alliance events
6. Analysis of interviews and observations
7. Documentation of findings and discussion of results

Detailed descriptions of the approach and methodology adopted as well as the study area are respectively given in Chapters 3 and 4 of the thesis.

1.5 Organisation of the Thesis

This thesis consists of nine chapters. Chapter 1 gives a general introduction to the thesis, sets the context for the study and gives an insight into the problem to be studied, the objectives, the main research question, sub questions and hypothesis.

Chapter 2 presents a review of key literature that is used to inform the direction taken by the study. It provides an enquiry into learning theories and innovation around which this thesis is set. It identifies key disciplines where this thesis fits and discusses the literature that supports the analytical model used in this study. A conceptual framework is also presented. This was constructed drawing on the literature and was used to guide the research enquiry and analyse the findings. The link between the research questions and the conceptual framework is explained.

Chapter 3 gives a description of the approach and methodology adopted for the study. It gives the justification for the methodology selected and describes how this was used to collect, validate and analyse data. It also outlines the ethical considerations that were made. Chapter 4 describes the settings within which data was collected. A description of the SWITCH Project and the cities that are part of the study are given.

Chapters 5 to 8 present the results and discuss the outcomes of the study in relation to the research questions specified (described in section 2.3.9). Chapter 5 provides information on the structure and formation of the learning alliances (LA) including an assessment of the key stakeholders who are part of the LA and their role. This addresses the issue of how a learning alliance looks like in practice. Chapter 6 presents the learning experiences of the stakeholders to provide insight into how learning occurs. Chapter 7 presents information on the early outcomes of the learning alliance as well as issues of power relations and social dynamics that were encountered in the learning alliance. Chapter 8 presents an analysis of the key lessons coming out of how learning alliances are implemented within a project context.

Chapter 9 presents the conclusions of the study based on the results obtained. It gives the policy implications of the study and goes further to make recommendations for practice and further study. This is followed by a bibliography and appendices of supporting information.

2 Literature Review and Conceptual Framework: An Inquiry into Learning and Innovation

2.1 Introduction

This chapter firstly presents a review of literature on learning and innovation in relation to Integrated Urban Water Management (IUWM). The next section outlines the concepts and limitations of IUWM. Section 2.3 outlines the theoretical considerations that will form part of this chapter. This is followed by a discussion of innovation systems, learning alliance theories and concepts and the role of learning alliances in IUWM. This leads to the development of the conceptual framework of the study. The research questions are discussed and the data necessary to answer the questions are identified. The chapter concludes with a summary and lists the cases that will be discussed in subsequent chapters.

The literature review focuses on processes of social learning, stakeholder interaction and collaboration, innovation and governance (Figure 2.1).



Figure 2-1 Conceptualising learning alliances for the study (source: author's own)

To further explain why learning alliances were created and are being studied, it is important to take a step back to understand the developmental problem that the learning alliance in this study was set up to address.

2.2 Integrated urban Water Management

Urban water management faces extraordinary and complex or “wicked” problems in which solutions to one part of the system may create new problems elsewhere (Butterworth and Morris, 2005). The defining characteristics of ‘wicked’ problems are ambiguity and uncertainty. Paquet (1989) explains that the solutions to these problems are not clear cut; giving rise to uncertain means-end relationships which are not well understood. According to Mitchell *et al* (1997), conventional management of urban water considers the different aspects such as water supply and waste water as separate entities and therefore the planning and operation of these services are done with minimum reference to each other. They further go on to describe the situation where large volumes of water are harvested and quality water is subsequently delivered to households who in turn use the water and produce waste water. This waste water is then taken for treatment and discharged back into the environment with very little of it being used. Similarly, large volumes of rainwater are collected and discharged without being used and without any quality improvement. The adverse impact of the above-mentioned process which summarises conventional urban water management on the water balance of these areas is very substantial (Mitchell *et al*, 2004).

What is seen is that conventional urban water management is struggling to manage ever scarcer water resources to deliver water and sanitation services and dispose of waste water without adversely impacting the quality of life of urban populations and the downstream environment (Butterworth and Morris, 2005).

The proposed direction for dealing with these complex issues to ensure sustainability is through the integration of various aspects of urban water management where interventions on one side consider the effects on the other side. One concept that embodies this idea is that of Integrated Urban Water Management (IUWM). IUWM is informed by the broader concepts of Integrated Water Management (IWM). IWM considers managing water beyond quantity and quality issues by incorporating the social, economic and sustainability dimensions (Geldof, 1995). Considering stakeholders and institutions that make up the socio-political context of urban water management is deemed to be very important to achieving integrated water management (Cowie and Borret, 2005).

The concept of IUWM is in itself an extension of Integrated Water Resources Management IWRM, a concept which was formally established in global thinking between 1990 and

1992 (UNEP, 2003). Since then, the basic principles of IWRM have been further refined by various international events focusing on water and environment. The growing conviction that IUWM should be pursued as a core component of IWRM is due to the fact that cities are thought of as the dominant features in the catchments where they (cities) occur and also due to the rapid population growth and expansion of urban centres. Coupled with the challenges of managing urban water it was envisioned that successful implementation of IUWM will contribute to the theory and practice of IWRM (UNEP, 2003). IUWM is thus defined as, “*the practice of managing freshwater, wastewater and stormwater as links within the resource management structure, using an urban area as the unit of management*” (UNEP, 2003).

From this definition, it is seen that IUWM was being proposed as a process that could bring together all the interacting elements (activities, technologies, institutions, boundaries) of water management. IUWM employs a range of tools which include, but are not limited to water conservation and efficiency; water sensitive planning and design, including urban layout and landscaping; utilisation of non-conventional water sources including roof runoff, stormwater, greywater and wastewater; the application of fit-for-purpose principles; stormwater and wastewater source control and pollution prevention; stormwater flow and quality management; the use of mixtures of soft (ecological) and hard (infrastructure) technologies; and non-structural tools such as education, pricing incentives, regulations and restriction regimes (Mitchell, 2004).

Mitchell (2004) further proposes the following as important principles of IUWM:

1. Consideration of all parts of the water cycle, natural and constructed, surface and sub-surface, recognising them as an integrated system
2. Consideration of all requirements for water, both anthropogenic and ecological
3. Consideration of the local context, accounting for environmental, social, cultural and economic perspectives
4. Inclusion of all stakeholders in the process
5. Striving for sustainability, balancing environmental, social and economic needs in the short, medium and long term

The fourth point above which is the inclusion of stakeholders is significant to the subject matter of this research which is about interaction of multi-stakeholder groups and processes in IUWM. It supports the earlier point made about moving beyond technical solutions to

consider equally important issues of good governance with the human dimension in a prominent place (Pahl-Wostl *et al*, 2008).

The principles enumerated above call for integration in a way that allows areas of planning and management that were traditionally separated at the city level (or other management level) to be brought together. It also calls for strategies which allow stakeholders to be brought together to make policies and plans for achieving IUWM. The entrenched traditions of local and regional water resources management will have to be combined with integrative river basin approaches, while embedding them into a perspective of global change. This requires linking research areas which have previously been developed in isolation with little exchange among them, with social learning of different stakeholder groups (Pahl-Wostl *et al*, 2008).

An example is given (Mitchell, 2004) where integration of urban water management (UWM) with urban landscape planning and perhaps, urban livelihood planning, will naturally bring together key stakeholders and point the way towards multi-stakeholder working groups.

It is acknowledged (Mitchell, 2004) that the inclusion of all stakeholders in the process of urban water management is as important as trying to achieve a physical integration of the system since the system works based on an institutional framework. In this study, a stakeholder will be defined as “one who can affect or is affected by the achievement of an organisation’s objectives” (Freeman, 1984, Mitchell *et al*, 1997). Including stakeholders requires good understanding of who the stakeholders are and the role they play. Stakeholder roles are better understood in the context of water governance (network governance). This is further discussed in the section on IUWM in relation to water governance.

In this present study, Integrated Urban water management and Sustainable Urban Water management (SUWM) will be used interchangeably since they represent similar concepts which consider the whole cycle; ‘closing the loop’. It is the proposition that integrating all aspects of the water cycle will lead to a better and more sustainable way of managing water.

While in theory, principles of IUWM provide a promising approach for dealing sustainably with water management, its practice proves to be somewhat different. Brown and Farrelly

(2008), suggest that the slow progress in applying these new concepts is the result of a range of institutional barriers impeding implementation. In spite of its global acceptance and years of refinement leading to clearly laid out plans and concepts, implementing IWRM has been quite a challenge and its implementation especially in developing countries has had limited success. Apart from funding which is always a challenge, other barriers identified include fragmentation of institutional responsibilities, perceived complexity of the concept, gaps in knowledge and technology, and lack of adequate data, among others (UNEP, 2003).

A common critique of IUWM is the over-emphasis on technologies and technological demonstrations, as if they on their own will achieve the integration and sustainability needed. It is often thought that technical solutions are needed to deal with water management problems.

Real life examples from Australia which is a leader in the state of knowledge regarding IUWM practice, confirm these tendencies to lean towards purely technical solutions. Brown *et al* (2005) indicate this has made the implementation of IUWM problematic despite the fact that since 1980s there has been a lot of information and research on sustainable urban water management systems. This is corroborated in Syme (2008) who points out that while great strides have been made towards IUWM in the Australian context, the social, institutional and decision-making factors have not been the major drivers of change.

A study on integrated stormwater management by Brown *et al* (2005) showed that the process was dominated by technocratic expertise resulting in a series of “strategic plans” focusing on technologies with little consideration of the socio-political issues and the corresponding strategies needed to enable political relevance in the broader local administrative system. Furthermore, the project had a top down approach with a centralized authority directing local government to prepare plans in consultation with the community. This turned out to be unsuccessful, even though all plans achieved regulatory compliance. This highlights the tendency of projects to produce documents, technical demonstrations and plans which are supposed to act as guidelines, but in terms of real action or change that makes an impact, this is often lacking. The researchers go on to point out that:

“The legislative direction was based on a false technocratic assumption of how to enable change. It involved one set of centralized technical experts directing another

set of local technical experts to develop engineering plans. As it turned out this was indeed a naive approach for enabling change towards a more sustainable urban water future, with the idea that the identification of technologies will ‘somehow’ translate to the necessary political and social capital needed to advance institutional change and implementation”. (Brown et al, 2005, p 7)

Referring to earlier research, Brown (2005) states that the new paradigm towards sustainable water management developed over the years requires a shift from a technocratic approach to one that is adaptive, participatory and integrated. She, however, notes these changes have not been enough to steer the course of traditional urban water management towards innovative institutional regimes and mechanisms for stakeholder participation.

The inability to shift could be explained by the perception that Integrated Urban water management is about developing a framework to manage an integrated system of urban water infrastructure. This urban water infrastructure is understood to be made up of a number of elements - source and receiving water bodies, sewerage networks, wastewater treatment plants, etc. - which need to be controlled and optimized as an integrated system (Cowie and Borrett 2005). This definition clearly shows the focus on physical infrastructure. This inability to shift poses serious challenges to the implementation and attainment of sustainable urban water management.

The argument raised by Brown *et al* (2005) is that challenges to urban water management are rather entrenched within the broader socio cultural and political framework, but this is not often addressed within the ‘narrow’ scope of technological advancement and designs. This assertion is supported by Carden *et al* (2009) who state that the adoption of sustainable water management practices faces more social and institutional barriers rather than technical ones.

Examples of innovations in the urban context are confined to infrastructure developments using total water cycle management concepts (Mitchell 2006), often overlooking the fact that the ability to implement technical innovations is facilitated by institutional and policy changes (Ingram and Bradley 2005; Head *et al*, 2010). Mitchell (2006) points out that this ‘technocratic culture’ is based on the need to demonstrate implementation success within short-term political cycles and project cycles. This path dependency affects innovation in water management (Ingram and Bradley, 2005). Studies by Brown (2005) and Roy *et al* (2008) identify some of these institutional impediments to the implementation of

sustainable water management: (i) the lack of coordination of governing policies and regulations (ii) fragmented administrative frameworks and (iii) the limited attention to institutional learning. IUWM is envisaged as a means of overcoming the above-mentioned impediments to sustainable urban water management. This would mean that any process targeted at sustainable or integrated water management should target the coordination of institutional framework and policies as well as institutional learning. A related study (Head *et al*, 2010) indicates that sustainability-related debates about urban water are now moving away from the focus on physical infrastructure to the concept of integrated urban water management (IUWM) in which stakeholders are included. Brown (2005) also mentions the need for assessing the individual components of an urban water system and the interactions between them through the use of appropriate data.

Pahl-Wostl *et al* (2008) point out that the challenge of dealing with sustainability is not due to an inability to understand ecological processes, but rather a lack of understanding of the underlying governance and cultural systems; how they are structured and managed as well as their interactions with ecological systems.

These shortcomings of a largely technocratic approach to IUWM, justify the need for an approach that brings the socio-cultural and political context as well as institutional framework into use. Despite the challenges noted, a number of propositions are made to point in the direction of greater integration towards sustainability. As expressed by Brown *et al* (2005), unless broader strategies such as political leadership, institutional reform and social change are addressed, current research and practice will remain just tinkering around the edges. This suggests institutional collaboration, which is described by Margerum (2008) as a promising means of achieving integration in water resources management. Such an approach requires a new understanding of sustainable water management as a collective research and learning process Pahl-Wostl (2002a). Communication and knowledge transfer are identified by Owens *et al* (2006), as key to building a collaborative process that can ensure technical and scientific knowledge become part of decision making. Pahl-Wostl *et al* (2008) suggest that the ability to transfer and integrate knowledge through a collaborative process promotes technical and organisational learning, which results in problem solving and innovation that underpin effective and flexible water systems (Pahl-Wostl *et al* 2008).

Studies have identified integrated cooperation structures (including non-governmental stakeholders, government bodies from different sectors and different hierarchical levels), and advanced information management (including joint/participative information production, consideration of uncertainties, and broad communication) as the key factors leading towards higher levels of learning (Pahl-Wostl, 2009, Head *et al.*, 2010). These structures through learning can work to promote the needed integration for sustainable water management. An example can be seen from Sydney, Australia where information sharing between organisations and collaborative inter-organisational relationships, have played a key role in sustainable urban water governance (van de Meene *et al.* 2009).

It can be concluded from the above discussion that to achieve integrated urban water management, a mechanism is needed that can deal with complexity and at the same time facilitate collaboration among stakeholders while considering the social and institutional dimensions of urban water management. The points raised above resonate with the generic concepts underlying the learning alliance which are further expanded in the next section.

2.3 Conceptual Framework

This section narrows down the discussion to the defining of the conceptual framework and gives details of the theoretical basis for this research. It starts with a summary of theories of innovation and learning that are relevant to the development of the conceptual framework. These theories are further synthesised to arrive at a conceptual basis that defines the direction of the study. As indicated in the earlier sections, IUWM looks at water management not only from the hardware and technological perspectives but also from the institutional and softer aspects of integration. To build on the framework for this study, we will first understand what soft systems involve and how learning alliances fit within this bigger concept of soft systems for management of urban water. In this thesis, the term ‘systems’ is used in different ways. It is used as a construct to refer to the whole idea of the urban water management system and governance. It also refers to the learning alliance system as an entity made up of various actors within the broader system of urban water governance (a directly observed entity or model within a broader construct of systems). Details of how the systems concepts are used are given in the paragraphs below.

2.3.1 Soft Systems Concepts

The system construct can be used to describe a network of actors involved in knowledge processes (Röling, 1992). In particular, a knowledge system in which individuals and institutions are involved in joint learning can be referred to as a 'soft system' and this concept of soft systems can be used to identify the kind of learning that occurs within knowledge networks (Röling 1992). Soft Systems Theory or Methodology can be described as an organized process of inquiry, based on systems models, which leads to choice of purposeful action (Checkland, 1985). The primary use of Soft Systems Methodology (SSM) is in the analysis of complex situations where there are divergent views about the definition of the problem — these complex situations can be described as 'soft problems'. Other literature also describes these complex situations as 'wicked problems' (Checkland, 1983; Rittel and Weber, 1973).

Urban water management presents such complex 'soft problems' which require solving in different ways. To intervene in such situations, the soft systems approach uses the notion of a 'system' as an interrogative device that will enable debate amongst concerned parties. In its 'classic' form, the methodology consists of seven steps, with initial appreciation of the problem situation leading to the modelling of several human activity systems that might be thought relevant to the problem situation. Through facilitated discussion, the decision makers will arrive at an agreement over what changes may be feasible within the system. There are several documented examples of the use of a soft systems approach in different fields, mostly as an analysis and planning tool. As mentioned in section 2.2.1, to overcome challenges in the implementation of IUWM, one needs to go beyond technological approaches to a system that also takes into account, socio-cultural, political and institutional issues.

“The prospect of changing social and environmental conditions requires the continuous transfer and integration of knowledge for long-term problem solving capacity. The issue of knowledge integration has emerged as a key challenge in this regard. Key issues raised include the need to integrate diverse forms of knowledge, to address the schism between water quantity and quality, and to bridge the gap between science and strategy development.” (Head, Wallington, & Robinson, 2010, p24)

This presents a complexity to which a soft systems methodology can be applied in developing models of activity that could bring stakeholders together to solve problems.

Pahl-Wostl et al (2008) presents a similar soft systems framework for IUWM which can be used for integrated decision-making. This process similarly follows seven steps namely;

1. Assessing the nature and status of the water resource;
2. Defining short-term and long-term goals for the system;
3. Determining objectives and actions needed to achieve selected goals;
4. Assessing benefits and costs of each action;
5. Implementing desired actions;
6. Evaluating the effects actions and progress toward goals; and
7. Re-evaluating goals and objectives as part of an iterative process.

The learning alliance (LA) which is the subject of this study has been proposed as a way of dealing with the complexities of urban water management by addressing the institutional set-up for managing water (Butterworth and Morris, 2005). This is being explored as a means of achieving learning which will then lead to innovation in the urban water system. LAs can be thought of as a soft system model in the testing phase, or given the above steps, at stage 5 of the framework where the application of the learning alliance is a desired action aimed at solving challenges of IUWM with learning and innovation as short-term goals. For example, according to Smits *et al* (2007), an LA can be seen as an analytic tool to find out about the sustainability and scale of innovations.

2.3.2 Learning Alliance Concepts and Methodology

A learning alliance is defined by Smits *et al* (2007) as “*a series of connected multi-stakeholder platforms at different institutional levels (national, district, community etc.) involved in the innovation in an area of common interest and its scaling up*” (Smits *et al*, 2007, p3). One of the results of stakeholder interaction is the promotion of innovation (Röling, 2009). Similarly, learning alliances are expected to accommodate the complex nature of innovative systems and to facilitate multi-stakeholder processes to achieve more effective and appropriate local innovations, as well as capacity development of sector stakeholders to sustain innovations and adapt and replicate them elsewhere.

Learning Alliances are similar to other concepts such as multi-stakeholder platforms (MSPs), partnerships, innovation systems and communities of practice (COP) which have well documented experiences. Steins and Edwards (1999) introduce the concept of a platform as a space to coordinate collective action by multiple users of a common pool resource. They define a platform as a negotiation or decision making body (voluntary or

otherwise) which is made up of different stakeholders who have the same common pool resource problems and who, recognising their interdependence on each other, come together to agree on strategies to solve them. Major functions highlighted in this definition are negotiation and decision making. In a similar manner, learning alliances are considered as a kind of platform based on multiple stakeholders, with an interest in a common topic – urban water management - and interests in resolving challenges or issues around a common goal. The goal, in the case of SWITCH, was how to achieve more integrated urban water management.

The key defining characteristics that make learning alliances different from other platforms are the structure and focus of the learning alliance (Smits *et al*, 2007). In terms of structure, the learning alliance not only has multiple stakeholders, but also has stakeholders from different institutional levels and from different disciplines (see section 2.3.4.1 on stakeholder characterisation). In addition, the learning alliance is a facilitated platform. The focus of learning alliances is mainly on innovation and scaling up of innovations and the process of innovation in learning alliances is expected to cut across individuals, organisations and institutions.

Learning alliances aim to break down barriers to both horizontal and vertical information sharing, and thus to speed up the process of identification, development and uptake of innovation. Learning alliances are about building the structures needed to bring people together to analyse and address problems, facing the challenge of mismatched expectations and interests, and jointly learning how to find solutions. They also aim to bridge the gap between people on the ground, organisations at district or provincial level with responsibility for service provision and support, and national policy makers (Smits *et al*, 2007).

A learning alliance builds upon a number of methodologies such as stakeholder mobilisation, action research, process monitoring and dissemination and sharing (see section 4.3 and section 6.3 and 6.4). It is expected that by following these methodologies, a learning alliance will be successful in addressing the complex issues in integrated urban water management IUWM. It assumes that getting stakeholders together for dialogue will lead to concerted action within the life of any project after which stakeholders are expected to maintain a certain level of partnership.

SWITCH² sought to use the learning alliance approach to show that not only can the approach provide a safe and more equitable space for city stakeholders to critically examine and negotiate mutually acceptable visions of the future, but also that learning alliances can provide support for ground-breaking collective learning and adaptive management through multi-stakeholder engagement. Table 2.1 below provides a comparison between learning alliance concepts and the SWITCH learning alliance which is the subject of this study.

The objectives of SWITCH Learning Alliances³ included the establishment and facilitation of institutional changes necessary for scaling-up of its research findings and the documentation of mechanisms and processes associated with institutional learning and change across cities through the ‘learning alliance approach’ (SWITCH, 2006a). A key proposition was that sustainable urban water management is only possible if the entire Urban Water Cycle is managed in a holistic manner, rather than by a piecemeal approach. SWITCH believed that cross-sectoral co-operation at national and regional levels is essential and most importantly, that the urban water system needed to be managed in the context of the entire catchment (SWITCH, 2006a). More details of the SWITCH approach can be found in chapter 4 which discusses the study areas.

Table 2-1 Learning Alliance Concepts

Defining Characteristic	(General) Learning Alliance	SWITCH Learning Alliance
Atmosphere (Context)	Space for innovation: Multiple levels - (facilitated; linked) platforms	Global level (learning alliances in 12 countries around the world), Learning alliance platform in cities; City level stakeholder engagement+ institutional learning

² SWITCH is an acronym for Sustainable Water management Improves Tomorrow’s Cities’ Health. It was a project which aimed at achieving a paradigm shift in urban water management, through an innovative environment that brought together major stakeholders to drive research and demonstration activities and disseminate their benefits. More information available at www.switchurbanwater.eu.

³ SWITCH learning alliance activities were undertaken in more than 9 urban centres in Europe, Asia, Africa and Latin America: including Accra, Alexandria, Beijing, Bello Horizonte, Birmingham, Hamburg, Lodz, Tel Aviv and Zaragoza.

Action	Learning, action research, process documentation; dissemination and sharing (1) reviewing the framework, (2) implementing strategic actions (3) documenting and analysing results.	<ul style="list-style-type: none"> Resources made available to support demand-assessment by researchers, Joint visioning and problem solving to address institutional constraints and encourage institutional learning, Researchers develop alliances with other actors Attempts to establish demand and develop alliances are monitored and documented A communication strategy is developed and deployed early on in the project
Actors	Multiple stakeholders	Stakeholders in Urban water management: researchers, users, policy makers, community groups, implementers, regulatory agencies, city planners
Outcome	Innovation and learning: effective and locally relevant innovations, Scaling up principles of innovation, strengthening capacity for innovation and scaling up	<ul style="list-style-type: none"> Researchers understand the priorities of local users and take account of the prevailing institutional and political context in their design, Researchers undertake research in partnership with implementers and other key stakeholders, Research results are communicated appropriately and on time. Learning alliances become virtual learning organisations Research is used by local actors to improve water management in cities Results are scaled up and have impact beyond the city sites.
	(Smits <i>et al</i> , 2007)	(Butterworth <i>et al</i> , 2008)

(based on review of Smits *et al*, 2007 and Butterworth *et al*. 2008)

As noted, the learning alliance has dimensions of the atmosphere (context), actors, activities and outcomes (table 2.1). These define an action space for learning. Some key elements defined by SLIM 2004 can be used as indicators to test the kinds of learning and transformation that is seen within the SWITCH process.

- Change in relationships (moving from individualism and competition to interdependence and collaboration)
- Space for interaction and learning together
- Development of routines and procedures
- the willingness of public administration to transfer responsibility for achieving public aims to the area-based interaction of stakeholders (role of mayors, ministry, development partners, regulators etc)

Studies that have been done on knowledge networks by Creech and Ramji (2004) provide some pointers on how a learning alliance could look in terms of timelines. This is presented in table 2-2 below:

Table 2-2 Life Cycle of a Typical Knowledge Network

Number of years in operation	Quality of interaction and work
1-3	<p>Formative Phase”</p> <p>This period represents the beginnings of the process. At this stage, the members of the network members get to know each other. There is little collaboration at this stage. Because trust and openness has not yet been developed fully, there is some form of “protection of turf”. Individual and institutional priorities are considered above the network relationships.</p> <p>However, there is a lot of changes at the individual level. At the individual level new “knowledge” is created (even though it may not be done jointly with others). At this stage the level of interaction is minimal but individuals may be achieving a lot of results within their own domains.</p> <p>It is at this stage that time and money is invested at to set up the coordination systems and procedures to support collaboration.</p> <p>It is expected that through effective coordination and collaboration, the work of individual members may be aggregated into “network” successes.</p>
4-6	<p>Status quo/growth Phase</p> <p>At this stage, the benefits of networking and collaboration are expected to emerge.</p> <p>Clear funding for the process and work plans for the alliance should be in place; At this stage, the members will have met a number of times and the effectiveness of the network with respect to its knowledge contributions, communications and relationships with those it seeks to influence becomes apparent.</p> <p>Members continue to be productive, but also begin to question why they are bothering to do their work within a network context (this stage could see a decline in network activity?). While it may appear to be a setback, the questions on the value added of the network is a sign that the relationship among members is developing and maturing. Members recognize, implicitly if not explicitly, that they may be limiting their effectiveness by not adding value to each other’s work. It is expected that if this stagnation is not monitored well and responded to, then signs of nonperformance begin to emerge and members may not be fully committed to their tasks.</p>

	<p>By the fifth or sixth year, the productivity is either quite high indicating membership commitment even if collaboration is still an issue; or is quite dramatically falling off, indicating the likelihood of failure and wind-up in years 7-10.</p> <p>It is during this phase that a core group of members may emerge who have the desire to keep the network going into the future.</p>
7-10	<p>Decline and renewal Phase</p> <p>At this stage, networks may go in one of the following directions:</p> <ol style="list-style-type: none"> 1. Further stagnation and outright failure; or 2. Significant reduction of activities to simple information sharing around the network; or 3. Real collaboration among a core group of members although not necessarily all members.
10+	<p>Sustainability Phase:</p> <p>This phase is characterized by sustained interactions and long-term relationship among the members. At this stage, the members conduct joint work together, there is recognition of the network, and the network can exert influence beyond membership of the network.</p>

Source: based on a review of Creech and Ramji (2004).

2.3.3 Learning and Social Learning

The Learning Alliance is made up of two concepts: learning and alliance. Learning Alliances focus on learning. It is intended that learning will take place within a learning alliance and stakeholders will use what they have learnt to improve on their work. The term '*learning*' is theorised in many ways, some of which are presented in the following paragraphs.

2.3.3.1 Learning theories

One principle is that of Behaviourism which views behaviour as conditioned and regulated by environmental stimuli (Bandura, 1999). In this case, learning is evidenced by the change in the behaviour of an individual resulting from external stimuli, not taking the mind into account. The limitation of this viewpoint is that it is unable to explain why sometimes people do not respond to certain situations and remain unaffected by the results of their actions (Bandura, 1999). This then means that behaviour goes beyond stimulation by external agents to what Bandura (1999) refers to as determinants within the individual. This leads to another view of learning which attempts to explain human behaviour by

recognizing that people have ‘agentic’ capabilities (Bandura, 1999). This means that people are capable of processing information and that the actions taken by people are the result of thinking. These actions are informed by the experience of their prior actions.

People are self-organizing, proactive, self-reflecting, and self-regulating, not just reactive organisms shaped and shepherded by environmental events or inner forces. Human self-development, adaptation, and change are embedded in social systems. Therefore, personal agency operates within a broad network of sociostructural influences. In these agentic transactions, people are producers as well as products of social systems. Personal agency and social structure operate as codeterminants in an integrated causal structure rather than as a disembodied duality (Bandura 2001, pp 266)

This is the Cognitive view of human behaviour. In this case, learning is defined as a change in the way a person thinks as a result of active participation in an activity. Building on this active process of learning is the principle of Constructivism, which proposes that learning is based on current or past knowledge which is constructed based on experience. Wenger (2000) further describes learning as acquired over time and argues it is a result of participating in complex social systems. This is in line with assertions by Vygotsky (1978) that interaction with one’s social environment is a critical aspect of learning.

Wenger (2000) explains what he calls a social definition of learning as changes in a person’s social competence and experience resulting from interactions with an evolving social environment. He further classifies three steps of being part of a social learning process; engagement, imagination and alignment. While Wenger’s reference to communities of practice concentrates mainly on a group of people with similar characteristics, learning alliances refer to stakeholders with diverse characteristics. Some of the theories expounded however, can be used to explain some of the ideas underpinning learning alliances. Unlike communities of practice, learning alliances have a more varied group of stakeholders involved in learning and who are not necessarily seeking social competence. In learning alliances, moving from the periphery to the centre does not mean increased expertise or increased social competences but perhaps increased acceptance; and in the case of marginalised groups perhaps increased empowerment.

Wenger (2000) notes that when actors have the same level of experience within a community of practice, it does not lead to much learning. This gives room for a structure such as the learning alliance which has less of a focus on similar stakeholders than a community of practice, and works around the boundary to break boundaries; more like a fusion of different communities of practice (CoPs). Secondly, he notes that if there is too

much divergence there is not much learning. There is therefore the need to bring participants closer to ensure adequate learning from all sides (Figure 2.2). This in my view requires facilitation (section 2.3.3) to ensure that while the learning alliance has active participation from all different stakeholders, it still has a focus.

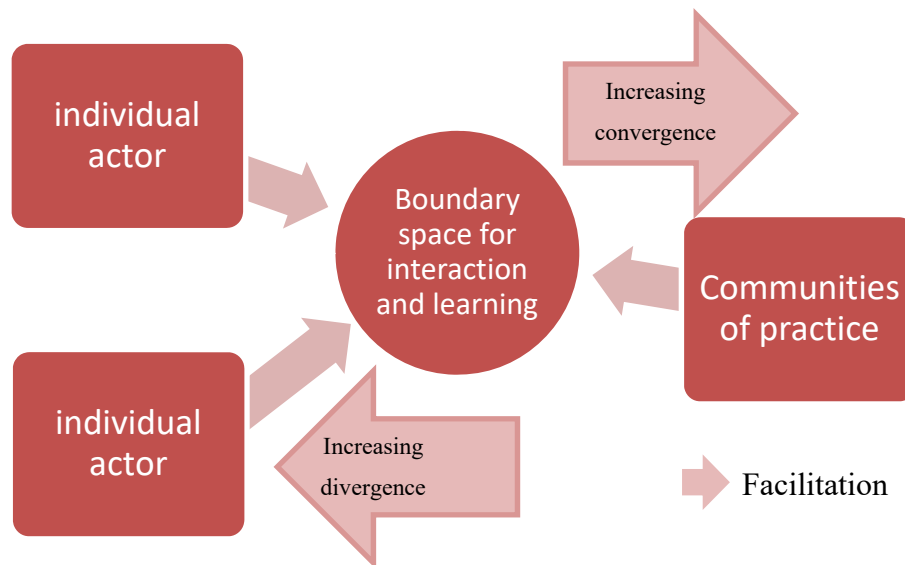


Figure 2-2 Facilitation towards learning (source: author’s own, based on review of Wenger, 2000)

Learning alliances offer a different type of learning which is probably best described by the term ‘learning at the boundaries’. In the view of Wenger (2000) some diversity brings about innovative learning.

Lundy *et al.* (2005) stress the learning function of a learning alliance, bringing together researchers, development workers, donors, policymakers and private enterprises. The premise is that enhancing learning in this group of stakeholders will improve the effectiveness of development programs and lead to a more rapid and effective innovation process. Central to this idea and some of the learning theories discussed, is social interaction. This leads to the second concept making up ‘learning alliances’; the term ‘alliances’, which implies a network and partnership among multiple stakeholders. Studies have shown that innovation capacity is enhanced by partnerships and alliances (Rajalahti, 2009). Two key features of successful agricultural innovation processes are (1) the use of multiple sources of information and (2) partnerships that allow the information to be used effectively (Rajalahti *et al.*, 2008). This echoes one of the pillars of IUWM presented in section 2.2. Through their joint actions, these networks are seen as media for scaling up of innovations, with social learning as the way to realise this ambition (Smits *et al.*, 2007).

Multi-stakeholder partnerships or alliances are described by Hemmati (2002) as bringing stakeholders together to dialogue and make decisions on a particular issue while promoting concerted action. These processes are based on principles of transparency and participation as well as equity and accountability.

Global change pressures have increased the calls to move from mechanistic and technocratic ways of managing natural resources to sustainable management paradigms that consider complexity and human dimensions (Pahl-Wostl, 2009). A key concept underlying this new management paradigm is Social learning (Pahl-Wostl *et al*, 2007). Most definitions see social learning as emerging from (and a condition for) a change process. (Smits *et al*, 2007) suggest that such an innovation, which is the result of a complex interaction of stakeholders and therefore seen as a collective achievement cannot easily be scaled up. Pahl-Wostl *et al* (2007), refer to Social learning in river basin management as the ability of the different stakeholders to manage their river basins effectively. Social learning is defined by Sol *et al* (2013) as a dynamic process with multiple stakeholders in an environment where there is interaction.

Extending this definition to the context of urban water management, one can refer to social learning as the ability of stakeholders to work collectively to improve on urban water management through social interactions that result in new knowledge and innovations, which influence behaviours regarding urban water management.

The points raised above suggest that the socio-cultural and institutional setting within which learning takes place is a very important aspect of an innovation system. This is because the institutions and socio-cultural values help to determine the extent to which individual learning can bring about innovation. Given a particular social setting, learning takes place as a result of continuous interaction between cognitive, behavioural, and environmental influences. This forms the basis of what has become known as Social Learning as illustrated in figure 2.3 below.

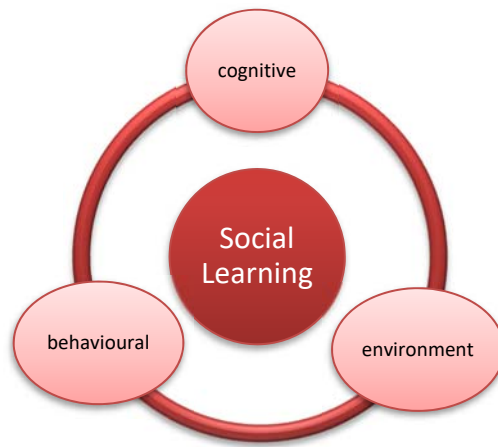


Figure 2-3 Factors influencing social learning (source: Sol et al, 2013; Bandura, 1971)

Scholars from the social learning tradition are however challenged by understanding and articulating the dynamics of learning (Smits *et al*, 2007). Different social learning theories provide varying assumptions about the nature of learning. While some focus on individual learning and cognitive changes that occur, others focus on collective learning and behavioural changes resulting from the interactions. In all cases, learning is presented as a process that is socially situated.

Blackmore (2007) makes a distinction between knowledge, knowing and learning. She describes knowledge as information, understanding or a state, which can either be perceived or acquired through learning. From this definition, she points out that learning can be associated with the acquisition of knowledge. Her differentiation refers to varying degrees of learning – “*different ways of knowing with different degrees of rationality ranging from scientific and philosophical to more intuitive and innate*” (Blackmore, 2007 p. 513). A similarity can be seen between her conception and Bloom’s taxonomy of learning which shows that there are deeper and more superficial forms of learning.

In a review of an integrated research project, Hawkins *et al* (2009) recognize that learning takes place at the individual, organizational and institutional levels. Reed *et al* (2010) indicate that learning starts from the individual level and that for learning to have occurred, there should be a demonstration that a “change in understanding has taken place in the individuals involved”. During the stakeholder interviews conducted as part of this study (see methodology section 3.3.2), stakeholders were asked for their perspectives and understanding of learning and the learning alliance process that they had been part of, with a view to analysing the responses to identify patterns of learning or change (see section

6.5). Nevis, DiBella and Gould (1995) further identify a 3-stage learning model made up of:

- Knowledge acquisition -- The development or creation of skills, insights, relationships.
- Knowledge sharing -- The dissemination of what has been learned.
- Knowledge utilization -- The integration of learning so it is broadly available and can be generalized to new situations.

Reed *et al* (2010) note a significant variation regarding interpretation of the role that social learning plays and point out that there is often a ‘conflation’ with concepts such as participation without much distinction between individual learning and social learning. This lack of clarity has limited the ability to make a fair assessment of whether social learning has occurred. Reed *et al* (2010) further indicate that to understand the processes that take place and to be definite on what happens, there needs to be a demonstration of what has taken place at the individual level and how it goes beyond the individual level to influence the wider stakeholder community. They also point out that social learning occurs through interactions between actors in a social system. They conclude that a better understanding of these processes will help to evaluate the extent to which social learning and by extension, change and innovation, will occur. This will also allow for better facilitation of the outcomes of such processes. Rajalahti *et al* (2008) point out that ‘*coordination and active promotion of partnerships are particularly important when attempting regional partnerships among multiple organizations with varying visions and objectives*’ (Rajalahti *et al* 2008, p29). Similarly, the SWITCH project saw the use of learning alliances as a means to promote collaboration towards the joint implementation of IUWM ideas in the various cities. More details on the SWITCH conceptualisation of learning alliances are explained in section 4.2.

Another type of learning that is identified is transformative learning which is described by Muro and Jeffery (2008) as a process whereby people gradually change their worldviews, often as a response to a trigger. This happens when people are faced with a disorienting dilemma that cannot be explained by their existing knowledge and experiences. This situation leads to a process of critical reflection for the individual that often results in transformation of perspectives. One such trigger as described by Diduck *et al* (2012) is fear of causing damage to one’s environment, community or health. The paper further notes that transformative learning occurs through reflective processes that occur at the individual level and also through rational discourse within a social setting. While

transformative learning is often more applicable at the individual level, it can still be applied in the study of social learning and collective learning in natural resources management. What is relevant to this study are some of the processes through which learning occurs and some of the outcomes of transformative learning as identified by Diduck *et al* (2012). Diduck *et al* (2012) identifies four key types of outcomes. These are instrumental, communicative, transformative and sustainability oriented learning outcomes. Some of these concepts and outcomes may be useful for explaining what happens to individuals as units or parts of a learning alliance. As noted in section 2.3.5 (figure 2.8), individual learning leads to organisational learning which leads to institutional learning as part of the learning alliance process leading to innovations. The study however identified transaction costs and motivation or incentives as barriers to learning (Diduck *et al*, 2012). In this study, we will also identify the factors that promote or prevent learning within the learning alliance context.

2.3.3.2 Transformations towards learning, innovation and change in stakeholders.

This section explores further theories about learning and transformations that lead to change. These provide insights into factors that could promote or limit learning and give further understanding of how individuals make collective decisions in a group and how that can lead to general changes within the group. This will provide pointers for the conceptual framework and research questions that have been developed for this research.

As noted from previous references to literature around learning, achieving transformation can be done through a social learning process. Figure (2.3) above indicates that the process of learning is influenced by the environment (social norms and institutional factors), cognitive factors and behaviours.

The Kolb learning cycle (Kolb, 1984), describes learning as a process through which “*knowledge is created through the transformation of experience*”, (Kolb 1984, p. 41). He further suggests that the knowledge that is gained is the result of first understanding and then being able to translate the experience into use (active experimentation by putting what has been learnt into use; learning by doing). This process of “grasping and transforming” experience into knowledge is explained by a simplified cycle which identifies four modes of learning. These modes to some extent correspond to individual learning styles. Learning styles of stakeholders are introduced at the end of this section and further discussed in

chapter 6 (section 6.6.3). The four key concepts described in Kolb's cycle for learning are: Abstract conceptualisation, Active experimentation, Concrete Experience and Reflective Observation.

'Abstract conceptualisation' refers to the way that people create concepts based on previous experience and information, or how they perceive or understand an issue. This raises the question of what is the most significant trigger that helps the individual and by extension, stakeholder organisations to come to this point. One trigger is learning, particularly learning by interaction with other stakeholders (Vgtostky, 1978, Wenger, 2000). This suggests that stakeholders can learn both from their own experience and from the experience of others as in the case of the learning alliance. Stakeholders by interacting and discussing a topic of mutual interest can conceptualise and formulate ideas.

The next step in this cycle is an 'active experimentation' in which learning is characterised by an actual experience which is often referred to as 'learning by doing'. In this mode, learning alliance members experiment with the ideas of integrated urban water management through their application. The design of the learning alliance suggested the use of demonstration activities as a means of learning about IWUM technologies. The 'concrete experience' gained by doing an action and the results of the experimentation or learning process, then provide a basis for observation and further 'reflective observation', where learners form new ideas or concepts informed by their concrete experiences. These become a basis for active conceptualisation and future action. Kolbs learning theory is built on a number of shared concepts from earlier proponents of learning. These include the idea that learning should be facilitated.

Banduras work on social learning underscores a link between the individual and environment or situation in which they find themselves. The suggestion is that the norms and factors in the environment have a key influence in changing individual behaviour. By extension, to bring about change in individuals, there should be a corresponding change in their environment. In the case of the learning alliance, the project sought to change stakeholder perception, behaviour and norms around integrated urban water management. Given that an individual's actions and understanding is based on their world view, it is important to explore the situation in which individuals who are part of the learning alliance find themselves. This is related to the institutional setup for cities in which the learning

alliance is based. This forms the basis of one of the research questions and is discussed in chapter 5.

These views of behaviour as being a function of the person and the environment can also be seen in Fishbein-Ajzen's theory of reasoned action (TRA)/theory of planned behaviour (TPB) where the personal function is seen terms of a person's beliefs and the environment function is represented by the social norms (Fishbein and Ajzen, 1975 and 1991). The theory of reasoned action is widely used in market research to test consumer choices for particular products but it is has also gained wide application in the measure and explanations of attitudes and behaviours. Examples of application in areas similar to this study is its applicability in technology acceptance and conserving water. For this study we can use the concepts proposed by the theory explore change in behaviours towards learning and innovation in IUWM.

The limitation of TRA is the assumption that when there is an intention to act, there is no limitation or barrier. Experience however, shows that this is not so in reality and TPB is used to explain the role of constraining factors. Some of the constraining factors may be time, organisational constraints and social factors. Other behavioural constraints can be discussed in terms of reinforcement or motivation as discussed above in the section on social learning theory. Positive reinforcers encourage immediate and repeated action that lead to behaviour change while negative reinforcers prevent the individual from acting out the observed learning actions (Bandura, 1971).

The reference to the theory of reasoned action and intent and planned behaviour provides an additional way of exploring the main research question, by looking at institutional limitations and constraints to adopting and implementing IUWM even when learning alliance have provided some learning and change at the individual level. As noted from the introduction, the research explores the use of the learning alliance as a mechanism to promote innovation in IUWM. The main research question asked is **'How and to what extent can learning alliances influence and promote individual and institutional change for innovation; as applied in integrated urban water management?'**

2.3.4 Interaction and Collaboration within LAs

One of the characteristics of learning alliances is the involvement of multiple stakeholders (see table 2.1 in section 2.3.2) and in this particular case, actors in urban water

management: researchers, users, policy makers, community groups, implementers, regulatory agencies, city planners. Making knowledge work and scaling up innovation also requires collaboration between actors in a situation where actors share their knowledge to jointly generate and use new knowledge (Daane, 2010).

2.3.4.1 Characterisation of stakeholders in urban water management

In discussing and characterising stakeholders, the project context will be discussed given that from most literature that has been reviewed, learning alliances and other types of multi-stakeholder platforms have more often than not, been used primarily for projects. In this context, stakeholders are persons or groups who are directly or indirectly affected by a project, as well as those who may have interests in a project and/or the ability to influence its outcome, either positively or negatively (IFC, 2007). Literature on multi-stakeholder processes uses other terminologies that are synonymous with stakeholders and could be used in a similar context. These terminologies include ‘actors, key players, interest groups and interested parties’. The definition of learning alliances provided in section 2.3.2 talks about stakeholders with a topic of mutual interest. In order to understand the connection of stakeholders within a system and for effective stakeholder engagement and collaboration it is useful to characterise the stakeholders. Suggestions from a study by Ziervogel and Downing (2004) indicate that understanding stakeholder networks is key to determining the opportunities and barriers to the flow of forecast information within the stakeholder group. To understand interaction and collaboration among stakeholders it is important to understand;

1. key actors and their roles,
2. the actors’ attitudes and practices,
3. the effects and characteristics of patterns of interaction, and
4. the enabling environment for innovation.

A study on the interventions and concepts of innovation systems (which will be further discussed in the next section 2.3.4) noted the importance of stakeholder characterisation and used it as one of the elements of an analytical framework (Hall et al, 2006). In this study, the framework of innovation domains will be used in the analytical framework for stakeholders in the learning alliance. However, we will start by understanding the different stakeholder groups. There are various methods of characterising stakeholders and this

section focuses on stakeholders in urban water management. There are various types of stakeholders and these are grouped based on the following:

Roles stakeholders play:

Stakeholder characterisation can be done according to the roles they are expected to play e.g. the influence they have on the project. Stakeholders can be classified either by the roles they play, or the levels at which they work. There are five roles identified depending on the degree of stakeholder importance and influence regarding decision-making. These stakeholder characterisations and distinctions are however not absolute and stakeholders can sometimes have different roles depending on the context of the project or activity they are involved in. In addition, there are five levels at which stakeholders can work. These are shown in figure 2.4 below.

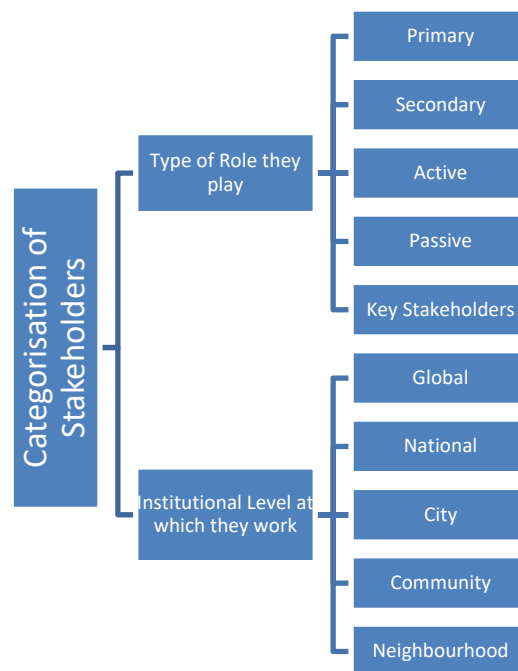


Figure 2-4 Stakeholder Categorisation (source: author's own based on Grimble and Ward, 1997)

In this research, stakeholders will be considered mainly at the city level. However, discussions on technology demonstrations within cities will bring up some community level stakeholders and institutional issues will refer to national level stakeholders. The global level of the learning alliance will be referred to when describing learning and sharing meetings and global city summits which were part of the project. Several activities contributed to setting the context for the learning alliance process in SWITCH cities and for incorporating diversity. These are the (1) initial scoping exercise and stakeholder

consultation, (2) the stakeholder analysis and (3) institutional mapping (further discussed in chapters 4, 5 and 7) along with a visioning exercise, which were done across all cities.

Stakeholders according to innovation systems categories

Beyond the basic stakeholder groups listed above there are other means of stakeholder characterisation. For example, within the Innovation System, stakeholders can be classified under the aspect of the innovation domain that they fit into. Arnold and Bell (2001) provide a typology of actors for the identification of relevant organisations within a national innovation system; this typology puts actors into five main domains; education and research system, business system, demand, intermediate organisations and infrastructure that supports innovation. This typology is modified by Hall *et al* (2006), and used in framing an Agricultural Innovations System. This modified typology slightly redefines the five main classes as follows: research, enterprise, demand, intermediary and support structures (figure 2.5 below). The key functions of these classes do not change and are explained in the following paragraphs.

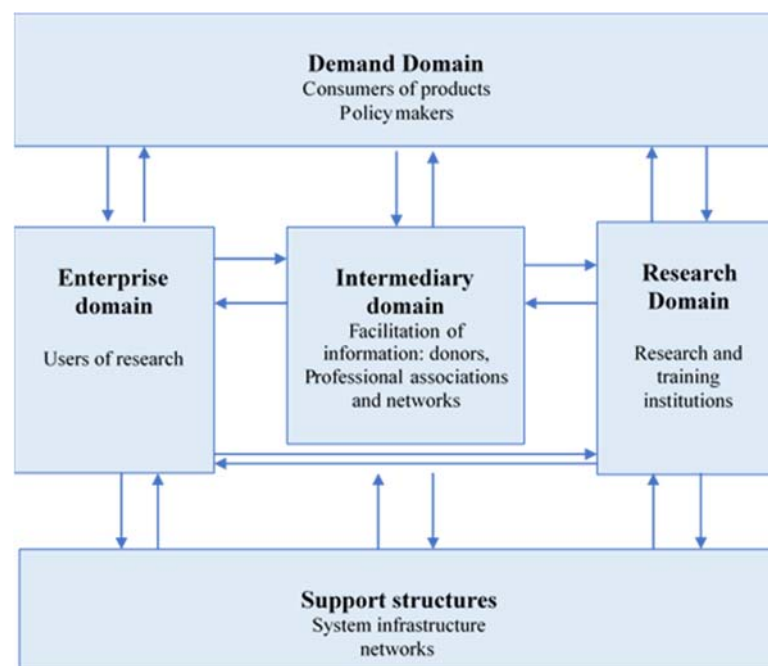


Figure 2-5 Innovation Domains based on Hall *et al*, 2006

The research domain refers generally to research and training institutions that provide knowledge. These are typically public-sector institutions but there is generally recognition of the role that private sector institutions and NGOs also play in providing knowledge within a particular sector. The second category is the enterprise domain which is made up

of the users of research. Based on their practice and experiences they also have some knowledge for sharing within an innovation system.

The demand domain is made up of consumers of products that are generated. The typology also places policy makers in this group; in that while policy makers may not be direct consumers of goods, they have demand for knowledge that is generated within the innovation system to inform policy direction.

The actors within the intermediary domain facilitate the information flow and knowledge transfer within the innovation system, including through networks and associations. The intermediary group plays a unique role that also allows the views of marginalised groups to be shared across organisations in other domains. It helps to broker access for groups that also want to enter the sector. Within the context of innovation, the learning alliance can be placed within the intermediary domain.

The categories of actors within the domains are not mutually exclusive and some of the actors can play multiple roles, which change with time. The typology provides a guide to identify the key organisations within an innovation system and helps to map out stakeholders who should be included in an innovation system for a particular sector.

The SWITCH Project recognised different types of stakeholders for urban water management. These were:

- Key organisations responsible for water management in each demonstration city. These include organisations that make decisions or effect changes in policy and practice (e.g. policy analysts and advisors, policy makers, municipal/local government personnel (political & bureaucratic), service providers (public, private & voluntary), regulatory authorities etc).
- People with influence with decision-makers directly (e.g. members of parliament, private sector companies);
- Civil society organisations and individuals who can bring pressure to bear on decision-makers (e.g. NGOs, unions, professional associations etc);
- Water user groups (e.g. consumer groups, irrigation groups, farmers etc.);
- Local 'leading lights' (activists or champions) working to address poverty, gender, environmental issues etc;

- Those who can support, reinforce and strengthen SWITCH activities and recommendations (e.g. training and research organisations, financial organisations etc);
- Those in the media who provide a means by which the learning alliance can reach the public; and
- The donor community, who can further finance and support SWITCH activities.

2.3.4.2 *Interaction of Stakeholders*

When it comes to interaction among stakeholders, Hall et al (2010a) suggest that brokering activities are needed to bring about the institutional and policy changes that are required to ensure that innovation goes beyond technological change. The question asked by Hall (2010) is how the linking up and interaction of stakeholders will take place, whether the networks are self-organizing or whether a particular organization is required to play an organising role. For this reason, a useful element in the building of networks and alliances is the process of brokering (Hall et al, 2010b). This brokering they noted, can be undertaken by programmes, projects or companies. In a study on water management regimes, Cash et al (2002) point out the need for brokers in integrated water management processes. This research showed how brokers can work to translate knowledge across different sectors of science, management and policy. Klerkx et al (2009) state that the role of the broker is to *'build appropriate linkages in innovation systems and facilitate multi-stakeholder interaction in innovation'* (Klerkx et al, 2009, p8). The broker can also negotiate changes in the wider techno-institutional system (Hall et al, 2010b). The different roles that innovation intermediaries perform are summarised by Kilelu *et al* (2011) as follows: *'Demand articulation, network brokering, Knowledge brokering, Innovation process management, Capacity building, Institutional building'* (Kilelu *et al*, 2011, p14). Hall (2010) further questions who/which organization can take up the role. This calls for *'collaborative capacity, or the formal and informal arrangements to facilitate structured interaction between water management organisations.'* (Head *et al*, 2010, p24).

Kilelu *et al* (2011) note that there are a number of terms by which intermediaries are known; broker, boundary spanner, and third party. The responsibility of brokering the LAs within SWITCH was done by a person known within the project as a 'facilitator'. This facilitator as explained by Smits *et al* (2007), plays a central role in the development of learning alliances. There are different types of facilitation. Thomas (2005) identified four different approaches to facilitation. Critical facilitation looks at the political nature of

facilitation and how the different stakeholders are affected. The person-centred facilitation approach is based mainly on the personal attitudes and qualities of an individual and makes the role of the facilitator central. It emphasises the presence of a facilitator. Technical facilitation is based on the skills needed to facilitate a group. There is also intentional facilitation where facilitators deliberately undertake certain actions that they expect will be noticed by participants and have the desired effect on them.

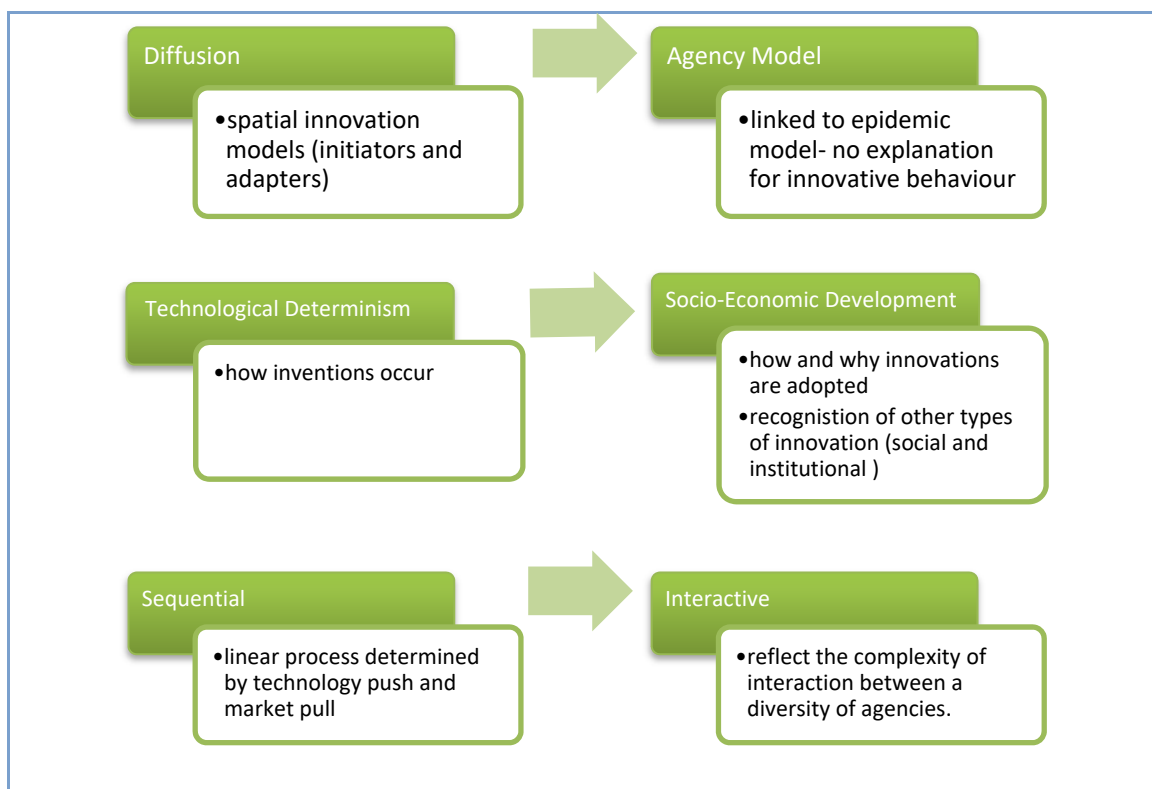
The SWITCH approach to learning alliances can be said to be a hybrid of these approaches. It started off with an intentional approach because SWITCH learning alliances were seen as an intervention that could be used to achieve the scaling up of innovation in IUWM. Once the concept was accepted, there was the need to develop the technical competence of the facilitators by training them in learning alliance development and facilitation. Once the learning alliances had been established, then the critical facilitation phase was necessary. As part of this, stakeholder analysis and institutional mapping were done to examine critically each stakeholder and their role within the LA and the IUWM sector as a whole. Finally, a person-centred facilitation which emphasizes the presence and attributes of the facilitator also played a role in ensuring the management of the learning alliance. The results of these facilitation approaches will be further discussed in chapter 6.

2.3.5 Innovation Systems

An Innovation systems approach can contribute to dealing with complex problems. IUWM presents an example of a ‘wicked’ and complex problem where the problems are not easily defined and agreed by all stakeholders, and solutions to a problem in part of the system often create new problems elsewhere and for others (Moriarty et al, 2005a, 2005b). This moves us away from a predictable and perhaps linear model to a more complex model in which optimising a solution becomes difficult. There is the need therefore to reflect on the complexity of interaction between different actors as well as understand the learning and adaptive behaviour in a highly uncertain and changing environment. This is where innovation systems can be used to develop an understanding of the interactions within the complex system. Daane (2010) suggests that making knowledge work and scaling up innovation requires collaboration between actors in a situation where actors share their knowledge to jointly generate and use new knowledge. Hall (2007) recognises innovation systems as having the potential to provide new ways of putting research into use, thus making it more relevant to society.

The learning alliance concept was introduced as part of the SWITCH project to act as a catalyst in an ‘innovation system’ in which scientific knowledge generated could be absorbed through institutional innovations and dynamics generated by social learning in the learning alliance. This concept is built around the central proposition that only an integrated approach to the process of innovation, bringing together all stakeholders, can address the range of failings of conventional research. Innovations can be looked at in different ways; technological innovation and institutional or organizational innovation. These will be further expanded in developing the conceptual framework.

Over the years, various theories of innovation have evolved based on different viewpoints. The different dimensions represent shifts in various view points and perceptions of innovations. For example, one view of innovation focused on just the technical dimensions of innovations, but this view has given way to other views which consider socio-economic dimensions and recognise other dimensions of innovations such as social and institutional processes of innovation. Furthermore, innovation is not seen as a linear process, but rather a complex process involving interactions among various agents of innovation. This further underpins an agentic view of innovation rather than a diffusion process of innovation. These different dimensions are identified by Moulaert & Hamdouch, 2006 and a summary of the changing viewpoints, drawing on their work, is presented in figure 2-6 below.



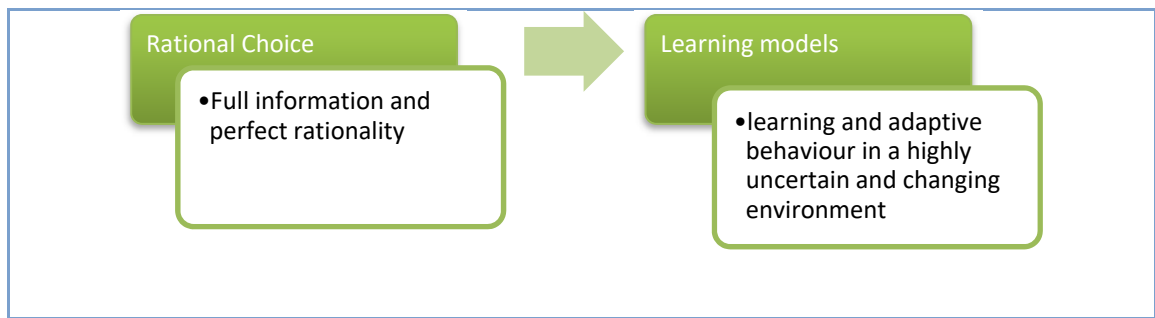


Figure 2-6: Shifting View points of Innovation Theories (source: author’s own, based on review of Moulaert & Hamdouch, 2006)

Earlier theories of innovation favoured the technological and economic viewpoints. From figure 2-6 it can be seen that in more recent times however, innovation is viewed in a much broader context which considers institutional and social innovation. This view of innovation was introduced in the late 1980s. The limitation of this view at that time however was the emphasis on the types of agents and actors within innovation systems and their roles, but not so much on their innovative behaviour – where innovative behaviour is characterised by learning, adaptation, multi-rationality (Moulaert & Hamdouch, 2006). The ‘new’ systems of innovation concept interprets innovation as a systemic and complex process, which is not seen as a linear sequence as in the neoclassical economic view and does not depend on one single person’s decisions (Butterworth & Morris, 2005). Instead, it is accepted that innovation is a result of intensive interactions between different actors within and outside an organisation and therefore depends heavily on relationships between the organisation and its environment. This study looks at the interactive and learning theories of innovation.

Although this study focuses on a sociological approach to understanding the process of innovation by analysis of the social and institutional dynamics, it is worthwhile looking at the various approaches to the study of innovation in order to design the conceptual framework. The overview of the different approaches will be limited to aspects that are of relevance to the social and institutional context within which the study of innovation is conducted.

2.3.5.1 Approaches to the study of innovation

From a technological point of view, innovation is often synonymous with invention, which is the discovery of new things. Innovation is conceptualised as the development of *‘new products and new machines or equipment or improvements of existing products and processes, which have been established on the basis of some technological change created*

by the innovator, and which are commercially exploited' (INNOCULT, 2001, p 49). In production, it is the development of new products and the related new production techniques. This view considers the product, while the systems within which innovation occur are not mentioned. Conventional research often has a technological view of innovation in which a technology is developed within a research 'laboratory' and is transferred to users. Very often this is done rather independently (Pahl-Wostl *et al*, 2007) with little exchange among researchers and the end users of the innovations they come up with. This type of research and projects that are modelled along these lines are often fraught with various challenges resulting in failure to achieve the needed impact. Moriarty *et al*, 2005a, identify some of the failures in conventional models for knowledge development and innovation. Some of these failings and challenges that limit the impact and scaling up of conventional research and projects are listed below:

- Inability to consolidate learning, share knowledge and build capacity
- Failure to deal with the environment in which innovation is developed
- Sector fragmentation

Previous technical research in the water sector has had a rather narrow focus and has neglected the political context and developmental processes which has led to disappointing impacts of many water management research projects (Gyawali *et al.*, 2006). To overcome this, research will have to move out of isolation to make an impact where it is needed.

INNOCULT, 2001 traces the economist's view of innovation to work by Schumpeter in 1911 which summed up innovation as an activity that may involve:

- introducing a new product or a new product quality,
- introducing a new product method,
- opening a new market,
- finding a new source for raw materials or semi-manufactures regardless of whether the source has existed before, or
- creating a new organisational structure in industry, for example by creating or breaking down imperfect markets (INNOCULT, 2001)

In this view, innovation is not just seen as a product (invention) but as a process or activity involving various steps that could be part of the process of innovation. Reference is made to a change in the existing structure of the environment within which innovation occurs.

From the sociological point of view, innovation is seen as a social activity which is the result of the complex interaction of human agency, socio-cultural values, and institutional practices. This social activity, which involves bringing together different actors, is 'synonymous with the ability to successfully engage with the socio-institutional environments in which innovative activity is embedded' (INNOCULT, 2001). This view clearly sees the actors involved in the process of innovation as being an important part of innovation. In this case, innovation occurs when there is a successful interaction of all factors. It highlights the view that innovation does not occur in isolation, but within a system which can be described as an innovation system.

Some definitions of innovation systems are given as follows:

'A system of innovation is that set of distinct institutions which jointly and individually contributes to the development and diffusion of new technologies and which provides the framework within which governments form and implement policies to influence the innovation process. As such, it is a system of interconnected institutions to create, store and transfer the knowledge, skills and artefacts which define new technologies'. (Metcalf, 1995, Butterworth and Morris, 2007).

An innovation system is defined by Hall *et al* (2003) as;

*'the groups of organisations and individuals involved in the **generation, diffusion and adaptation, and use (application) of knowledge of socio-economic significance, and the institutional context that governs the way these interactions and processes take place.**'*

This definition identifies four components of innovation; generation, diffusion, adaptation and use.

The generation and use of knowledge as given by the definition of innovation implies learning. This view of innovation presents a more '*systemic, interactive and evolutionary way, whereby new products and processes are brought into economic and social use through the activities of networks of organisations mediated by various institutions and policies*' (Hall *et al.*, 2003). Comparing the various viewpoints on innovation, it is noted that the success of innovation depends to a large extent on the institutions and policies which provide the socio-cultural and regulatory context for innovation. According to Hawkins *et al* (2009), fundamental changes are required in the wider institutional and policy environment to allow for innovation to take place. These are related to governance and institutional change including political, social, economic and administrative structures

in place to manage resources (Hall *et al*, 2003), complex mechanisms, processes, power and influence.

The INNOCULT⁴ project views innovation as a translation process, which is related to the production and combination of specific forms of knowledge. It also sees innovation as a social process which involves human agency and produces meaning and value. It is important for the product to be used by the actors in the system. This is dependent on the ability of the system to adapt and apply the knowledge generated. Innovation is said to be successful only if the promoters of the innovative idea can generate enough social recognition or appreciation that the particular idea, product, or process is indeed innovative (INNOCULT, 2001). If this assertion is true, then the use of learning alliances in SWITCH could be justified. The concept of learning alliances was developed to deal with the failure of conventional models of knowledge development and innovation in which innovative and potentially useful work does not succeed in moving beyond the original area in which it was piloted (Moriarty *et al*, 2005b).

The ‘interplay’ between different actors is also expected to lead to the ‘scaling up’ of innovation. There are several mechanisms and platforms that promote learning; these include Multi-Stakeholder Platforms (MSPs), Communities of Practice (COPs) and various types of Partnerships. They have been applied successfully in various sectors such as agriculture, health and education (Smits *et al*, 2007).

An example of an innovation system is the Integrated Agricultural Research for Development (IAR4D). This system considers the technical, social and institutional aspects of innovation in a learning environment. The knowledge of the different actors is considered to be important to the process. According to Hawkins *et al* (2009), innovation evolves through the continuous interaction among the various agents and also through learning resulting from the interaction.

⁴INNOCULT refers to Institutional Innovation, Culture and Agency in the Framework of Competition and Co-operation. The aim of the project was to study the mechanisms and strategies underpinning institutional innovations with particular reference to internationalisation. The study analysed both European and Global research policies to identify strategies for the internationalisation of research and technological development some of which is relevant to this study. The project dealt with three main areas: National Science and Technology Potential, Innovation in Public Institutions, and The Sociocultural Challenge. <http://www.iccr-international.org/innocult/>

Within the context of SWITCH there is the double use of the term ‘innovation’ to refer to both technological innovation and the process by which ‘innovation’ is scaled up. This study will focus on the process in which LAs are used as an innovative tool. The definition of innovation used is based on combining the concept of social learning and innovation systems as applied by Gottret (2006). Gottret (2006) defines innovation as *‘the process of technical, social and institutional change that results from the interaction among multi-layered sources of knowledge and its transformation into new things, products or practices, applied in a specific institutional and cultural context.’* (Gottret, 2006, p32).

It was expected that stakeholders in the Learning Alliance would move from a point of just discussing issues (at the beginning of the process) to joint planning and implementation (at the point of full stakeholder engagement). It was hoped that a successful LA would be able to take up the results of research for implementation and give their feedback. Within SWITCH, learning alliances were expected to have a joint vision and members were expected to work together to develop strategies and undertake activities that would help to achieve the vision.

2.3.5.2 Role of a Learning Alliance in facilitating innovations

It was further assumed that through the influence and facilitation of the learning alliance, the idea of integrated urban water management would be adopted by the key actors who would then work jointly to achieve it (IUWM). This would also hold true if the settings, actors, actions and outcomes followed that of an innovation system.

Hawkins et al (2009) argue that integrated research aimed at promoting innovation requires changes in individual, organizational and institutional capacities that support the innovation process. They further assert that organisations need to provide the necessary incentives that support interaction, learning and change. At the wider institutional level, policies that encourage working together are needed to ensure that stakeholders can interact in a space that places them on a level playing field.

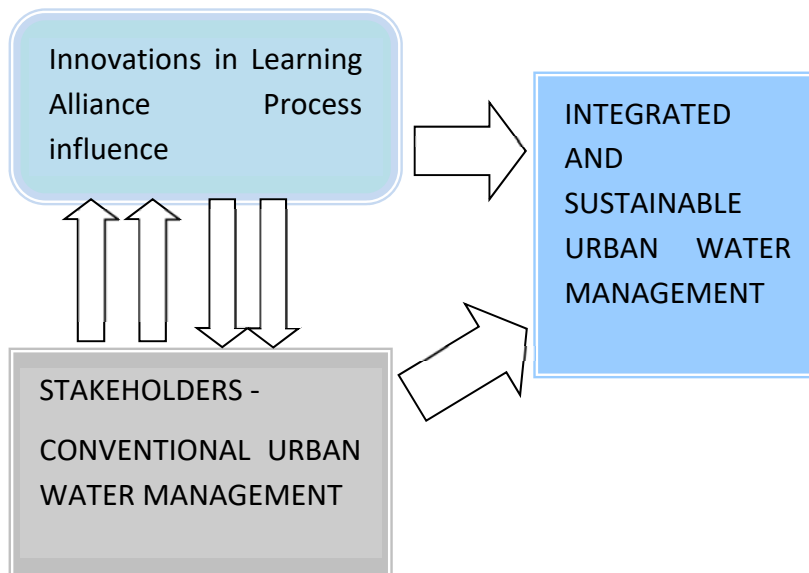


Figure 2-7 Result of the learning alliance process in water management (source: author's own)

The diagram above indicates the influence that the learning alliance can have on stakeholders in conventional water management. The assumption is that through participation and the influence of the learning alliance, stakeholders in conventional urban water management can progress towards integrated and sustainable urban water management.

For the learning alliance to be considered as an innovative process there has to be **interaction, knowledge generation and learning**, and the **adaptation and use of knowledge**. The time scale in which these processes occur can be either incremental or revolutionary.

According to Lundvall and Borrás, 1997, interaction between different stakeholders takes place at least at three different levels. These are:

1. Interaction between different steps of the innovation process.
2. Interaction between organisations.
3. Interaction between different departments of the same firm.

(Lundvall & Borrás, 1997)

The concept of Learning Alliances looks at horizontal and vertical linkages i.e. interactions between different organisations and interaction at different levels, namely: community (end-user level), intermediate (city level) and the national level. In addition, there is a global level which is expected to take up learning from the city/national levels. In this

study, we shall also look at interactions between the individuals who make up the innovation system. This is because it is assumed that the process of change begins from the level of individual learning (Chapter 6).

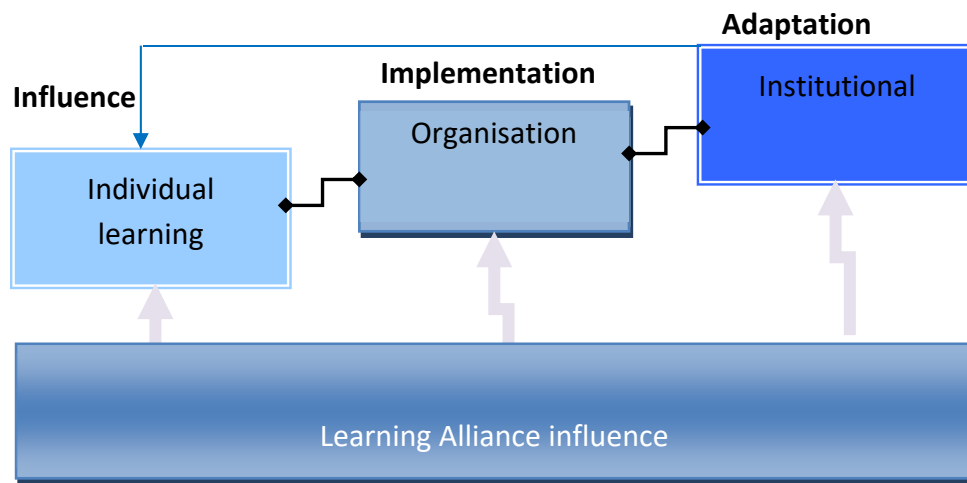


Figure 2-8: The Influence Process of the Learning Alliance (source: author's own).

According to Woodhill (2008), individuals and organizations have their own goals and objectives that are shaped by the wider institutional and cultural environments. These institutions create various incentives to which individuals (or groups) can respond by taking a particular action (Woodhill, 2008). The institutional framework which allows learning to take place is therefore considered in the study because it has an effect on individual learning and we are interested to see the extent to which this happens. Individuals are more likely to adopt a modelled behaviour if it results in outcomes they value.

The adaptation and application of the knowledge that is generated completes the process of innovation. In the definition of innovation given by Hall *et al*, (2003), it is expected that the knowledge generated will be of socio-economic significance. This creates some motivation for its adaptation and use.

Processes are increasingly being analysed as part of the institutional dynamics of innovation (Moulaert and Hamdouch, 2006). In this study, we look at innovation as a process that happens within the learning alliance. We will analyse innovations at three levels; individual, organizational and institutional while highlighting key governance issues. Within this system, we expect stakeholders in urban water management at the city

level to interact at various levels through a learning process. This learning process is expected to generate knowledge which will be applied in the broader institutional set up to achieve IUWM. This innovation is expected to improve governance in IUWM. The use of a learning alliance presents a challenge especially in an environment where stakeholders are not used to working together due to institutional bottlenecks. Ultimately stakeholder dynamics will affect the ability of the LA to achieve its goals. Because learning alliances are relatively recent in the WASH sector, there are few consolidated experiences (Smits et al, 2007) and it is important to have an in-depth understanding of what goes on within such a process. Does it follow the concept of an innovation system in terms of the settings, actors, actions (generation, use and application of knowledge) and outcomes (innovation)? What is the influence on stakeholders, their organizations and what are the issues affecting their contribution to the Learning Alliance process? What are the key triggers; do we see learning? How can the innovative process of the learning alliance be traced?

Six Innovation narratives described by Hall *et al* (2010) are:

1. 'Poor User'-Led approaches in which the process of innovation is led by users (e.g. farmers) who can be considered as poor. They are put at the centre of the process given that they have a better understanding of their production and social context.
2. Public - Private Partnership led innovation in which the expertise and resources from the private sector are used to drive innovations in the public sector.
3. Capacity development led innovation in which innovation is centred on improving innovation capacities in the sector through networking and institutional development.
4. Below-the-Radar-Led Innovation Approaches in which emergent innovation is based on opportunities presented by pro-poor markets combining marketing and social entrepreneurial interests
5. Investment-Led Innovation Approaches in which financial incentives for innovation is a key driver.
6. Communication-Led Innovation Approaches in which enhanced communication tools are used to facilitate the adaptation of technical and institutional innovations

Even though these narratives and subsequent framework for analysis are designed for innovations in the market place (agricultural markets and private sector), there are generic issues within the framework which can be applied in the context of the SWITCH learning alliance process. The description of the city level learning alliance in chapter 4 makes mention of a Start-up phase, growth phase and development phase and communication.

This is underpinned by a broader LA methodology of action research, process facilitation, dissemination and sharing (section 4.4). The methodologies used in SWITCH can be related to the capacity development-led and communication led-innovation narratives described by Hall et al (2010).

A framework for analysis of innovation and outcomes arising from learning alliances is based on principles outlined by Hall et al (2010). Although this framework was designed in relation to market/agricultural innovations, it can be applied in the analysis of the learning alliance because it is also an innovation process. The principles relate to the embedding process through which the innovation system is set up. The framework also assesses the context and institutional setting as well as the diversity of players that are part of the set up. In addition, the agency; i.e. who is the driver of the process and their goals and activities undertaken, is considered. The temporality and the historical context of the project and its place within the innovation trajectory, is also assessed. Finally, the intended outcomes and actual outcomes are also assessed as part of the framework. This assesses the kinds of changes that have been achieved and how these changes were achieved in relation to the innovation processes that were used. It identifies evidence to show whether it is the innovative process of the system (in this case learning alliance) that leads to the changes that are observed. These six (6) principles for analysing the process of innovation are presented in the sub-frame for innovation in section 2.3.8.

2.3.6 Improving governance with learning alliances

Warner (2005) talks of two schools of thought in exploring the use of multi-stakeholder platforms (MSPs) for integrated water resources management. He points out that one school of thought considers the activities to be centred on learning while another school of thought sees it as a governance mechanism. I would argue that the two schools of thought are different sides of the same coin and to some extent, there are overlaps in terms of actions and results. In both instances whether used as a learning mechanism or governance mechanism, the MSPs (which we will refer to as learning alliances) have similar actions of social interaction or interaction across various stakeholder groups. These interactions whether considered as learning or governance mechanisms also contribute to changes in a multi-stakeholder platform which in this case is the learning alliance. The results are changes or innovations for improved governance.

The governance dimension of multi-stakeholder platforms in integrated resource management has received a lot of attention over the years with a lot of research going into participatory activities of water governance. Warner (2005 & 2007) indicates learning often occurs at the individual level. With the dimension of learning and for that matter social learning fast gaining recognition as an important aspect of resource management, it becomes important to explore the extent to which it contributes to change. Furthermore, given that social learning and governance are different aspects of multi-stakeholder platforms, it is worth exploring the contribution of learning to improved governance in a multi-stakeholder platform. This link between governance, learning and innovation is highlighted by Gonzalez and Healey (2005) who point out that governance initiatives have the potential of generating learning that may lead to innovation. They therefore assert that exploring innovations in governance should focus on “*capacities for experimentation and learning and on actions which destabilise existing relations and open up the cracks and contradictions*” (pp 2065).

Gonzalez and Healey (2005) define governance capacity in an urban context as “*the ability of the institutional relations in a social milieu to operate as a collective actor*” (pp 2056). This becomes an important or significant dimension given the fragmented nature of the institutions that have been explored. Following that trajectory, one can explore the extent to which the different stakeholders act together as a collective group. Collective group activities and decisions are explored to identify the extent to which a platform for learning also contributes to improved governance.

This aspect of the literature review explores work by Gonzalez and Healey (2005) in developing a framework for assessing the governance transformations that lead to innovation in governance capacity. This framework is adopted because of the parallels that can be drawn with the learning alliance approach. This is used to partly inform the institutional analysis that is presented in chapter 5. It also is used for discussion in chapter 7 related to learning alliance outcomes.

Gonzalez and Healey (2005) *define institutions as the framework of norms rules and practices that structure action in social contexts; expressed in formal rules and structures but also in informal norms and practices and the routines of everyday life.* (page 2058). They point out that such an analysis explores interactions not just decisions, and includes

questions on which specific stakeholders are part of the discussion and why, and what the different stakeholders are contributing or taking away from the discussion and interactions.

Gonzalez and Healey (2005) propose the following framework (table 2-3) for analysing the dynamics of governance transformations, providing various levels of governance, which is of interest to the research because of its similarity to the structure of the learning alliance presented in table 2-1 (section 2.3.2).

Table 2-3 Framework for governance arrangements in Multi-stakeholder platforms

Level	Dimension
Specific Context	Actors – key players, their positions, mandates and interests Arenas – institutional sites Ambiences and interactive practices – communication
Governance processes	Networks and Coalitions Stakeholder selection process Discourses – framing issues, problems, solutions and interests Practices – routine and strategic interactions, processes of stakeholder engagement Specification of laws, formal competencies and resource flow principles
Governance cultures	Range of accepted modes of governance Range of embedded cultural values Formal and informal structures for policing discourses and practices

Source: Gonzalez and Healey (2005)

2.3.7 Limitations of learning alliances

Even though LAs/MSPs present a promising idea of the future of innovation in natural resource management, their implementation in practice is not always smooth. Knowledge about resource governance regimes and how they change is quite limited (Pahl-Wostl, 2009). According to Smits et al (2007), LAs have their history in agricultural participatory systems where they are fairly well developed. Experiences from the agricultural sector provide some of the critical reviews of these new concepts for participation. Some challenges in implementing partnerships include initial resistance to working together as a result of distrust and the practical difficulties that inhibit collaboration such as; distance, transaction cost, language and bureaucracy (Rajalahti et al, 2008). Other challenges are the

ability to find a common ground considering the different values and roles of the different key stakeholders.

Abrahamson, and Rosenkopf (1997) recognise that social networks are segmented by internal boundaries which can form at geographic, status, cultural, or industry lines. The boundaries can limit the process of innovation. For example, the use of multi-stakeholder approaches such as learning alliances presents a challenge, especially in an environment where stakeholders are not used to working together due to institutional bottlenecks. Stakeholder dynamics will affect ultimately the ability of the LA to achieve its goals and therefore it will be important to have an in-depth understanding of stakeholders, their organizations and issues affecting their contribution to the Learning Alliance process. Abrahamson and Rosenkopf (1997) further advance the view that when and how extensively an innovation occurs within social networks can be greatly affected by apparently insignificant events occurring at these networks' internal boundaries.

A study by Faysse (2006) reveals that some of the challenges faced by MSPs have to do with power relationships, platform composition, stakeholder representation and participation, decision-making mechanisms and the cost of setting up an MSP. Regarding power relationships, the challenge is often being able to accommodate the views of all stakeholders to arrive at decisions that are accepted, while not neglecting the views of marginalised groups. This is linked to representation of stakeholders and the platform composition should also be such that all relevant stakeholders are considered and invited to the platform. Sometimes forming an MSP may tend to neglect to include some stakeholders. In other cases where they are included, they are not allowed to make their views heard on the platform and these marginalised groups may end up accepting decisions that are made on their behalf without the ability to adequately negotiate or voice their opinions. In groups that are not well managed, the power may tend to reside with a particular group, mostly officials or those who have more information than others. The decision-making mechanism may also be affected when there are power imbalances. A further question is whether the decision made by the group is binding and whether it will be changed by a higher authority. The cost of setting up and running an MSP is challenging since it takes a lot of resources to convene meetings and to ensure that everyone is included.

Drawing on other studies, Faysse (2006) points out that the challenges faced by the MSPs are the result of the context in which they are set up. Faysse (2006) further outlines

unfavourable circumstances in which MSPs can be set up, such as the existence of high social inequities when at the same time there is the need for balance in an MSP representation. Another unfavourable circumstance is where a state is either too strong or too weak to support the MSP negotiation process. This allows certain individuals with power and influence to take over the process and skew the results of the decisions in their favour. Furthermore, disorganised stakeholder groups mean that some groups do not have adequate information, or are not well prepared to have meaningful representation and make contributions to discussions on the platforms. This often is a hindrance to the quality of their participation in the stakeholder discussions and decisions on the platform. A final issue that is highlighted as an unfavourable circumstance, is the lack of financial and technical capacities. This affects the quality of discussions particularly where external expertise has to be relied on. In addition, where adequate funding is not forthcoming, the number of meetings and various processes that lead to decision making may be compromised. The unfavourable circumstances discussed above lead to MSPs falling short of expectations, with large differences between theory and results on the ground. Dealing with some of the challenges requires adequate representation and inclusiveness on the platforms as well as skilful negotiation and facilitation of discussions on the platform. The circumstances under which learning alliances are set up will be described and analysed as part of this study.

2.3.8 Conceptualising the Study

In this section, we refer again to Figure 2-1 which was presented at the beginning of this chapter and which shows a **learning alliance** as the central focus with a number of linked concepts; **interaction and collaboration, social learning, innovation and governance**. The central concept is the use of a learning alliance as a tool to promote interaction and collaboration among stakeholders in urban water management. These interactions and collaborations are expected to lead to social learning which results in innovations. The innovations then become a means of improving governance in urban water management.

These concepts have been examined in detail in sections 2.3.2 to 2.3.6 above. This section develops a more detailed conceptual framework for the study (figure 2.9) and how it is applied in the analysis of the research questions.

The Conceptual framework is divided into 5 sub frames (1 sub-frame for the central idea of learning alliances and 4 sub-frames for analysis of the various ideas introduced in figure 2.1 and discussed above).

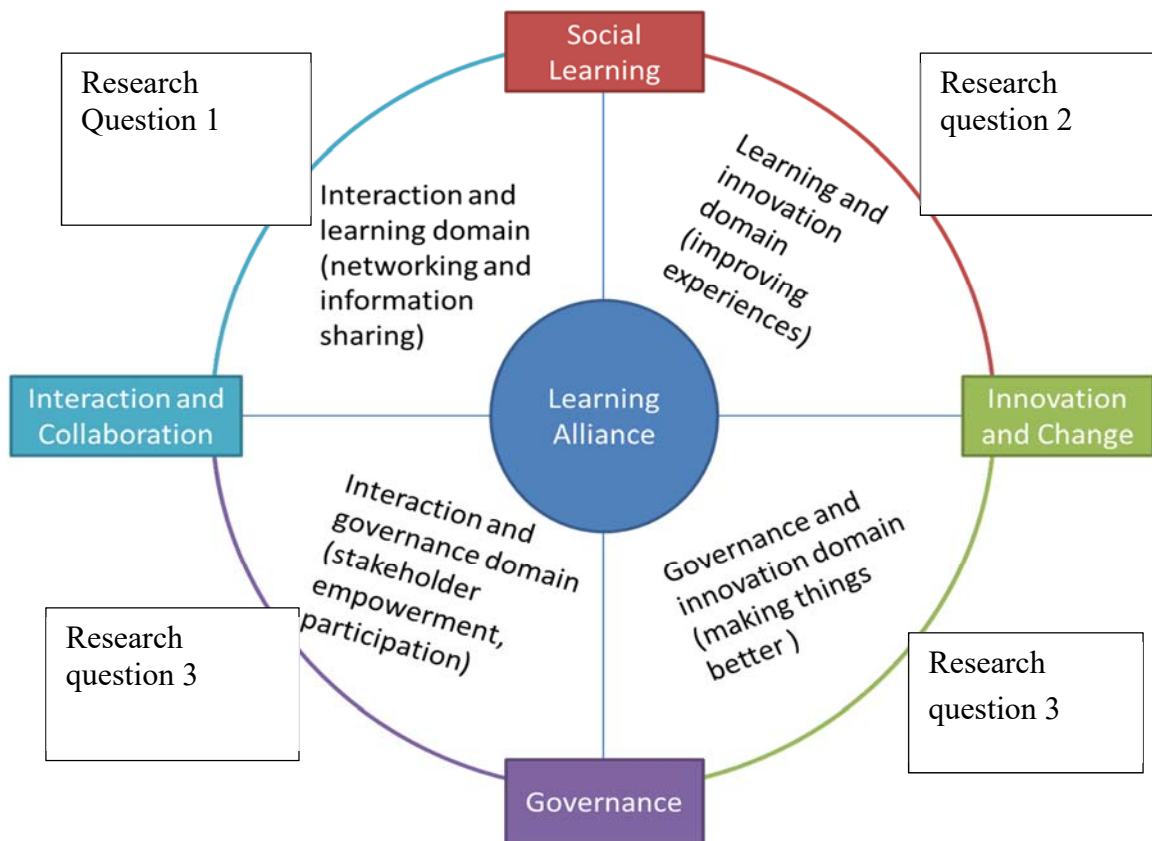


Figure 2-9 Conceptual Framework (source: author's own)

2.3.8.1 Sub-frame for the Central Idea of Learning Alliance

Firstly, the concept of a learning alliance. In this chapter we have defined theoretically the characteristics of a learning alliance. The research explored how this concept actually works in practice to address sub-question 1. This sub-question was expected to provide a detailed description and analysis of the learning alliance process. The focus is on ‘what does a learning alliance look like in practice?’ (who are the members, what do they do and how learning alliances are started). Answers to sub-question 1 will be presented in chapters 4 and 5 which provide an analysis of how the learning alliance was conceptualised for the SWITCH project and how it was implemented, respectively.

Box 2.1 Sub-frame for the Central Idea of Learning Alliance

Structure of Learning Alliance:

- Atmosphere (context)
- Action
- Actors
- Outcomes

Described in Chapter 2 and later in chapters 4 and 5

Considering Learning Alliance as an innovation system (used in chapters 5 and 6) Chapter 7 presents multiple outcomes:

- Embedding
- Context
- Diversity
- Agency
- Temporality
- Multiple outcomes

2.3.8.2 Sub-Framework for Analysing Interaction and Collaboration

The review of the literature on learning alliances indicates the interaction of multiple stakeholders as a fundamental process that leads to learning. Learning occurs through social interaction (Vgostky, 1978) and therefore an important question is to what extent interaction within the learning alliance can lead to learning and change. Interaction among the stakeholders also suggests the building or development of a social network. This brings up the concept of interaction and collaboration. In reviewing the learning alliances used in the study we explore the different kinds of interactive activities and collaboration that occur within the learning alliance. The sub-frame for interaction and collaboration helps in understanding the processes through which LAs contribute to innovation and will help to answer sub-question two. In addition, the interaction and collaboration framework provides further understanding of the social dynamics of the learning alliance and this contributes to answering sub-question 3. The interactions across the different domains of innovations and the role of facilitation also provide an insight into what kinds of inputs are required for sustaining a learning alliance.

Box 2.2 Sub-Frame for Analysing Interaction and Collaboration

Interaction and collaboration forms part of the learning, innovation and governance process. The following are used in analysis of how interaction and collaboration occurs with the learning alliance:

- framework for interactions under learning alliance – Table 2.1, figure 2.10
- Interactions across domains of innovation (figure 2.5)
- Stakeholder networking diagram (using visualyser) and spider diagrams

- Role of facilitation in stakeholder interactions (demand creation, network, knowledge and innovation process management, capacity building and institutional building)

This is combined with the general theory of change for learning alliances that was adapted by the project. Figure (2.10) shows the project conceptualisation of how the LA was expected to progress and some of the interactive activities expected to happen. These will be described and analysed in chapter 6 and 7.

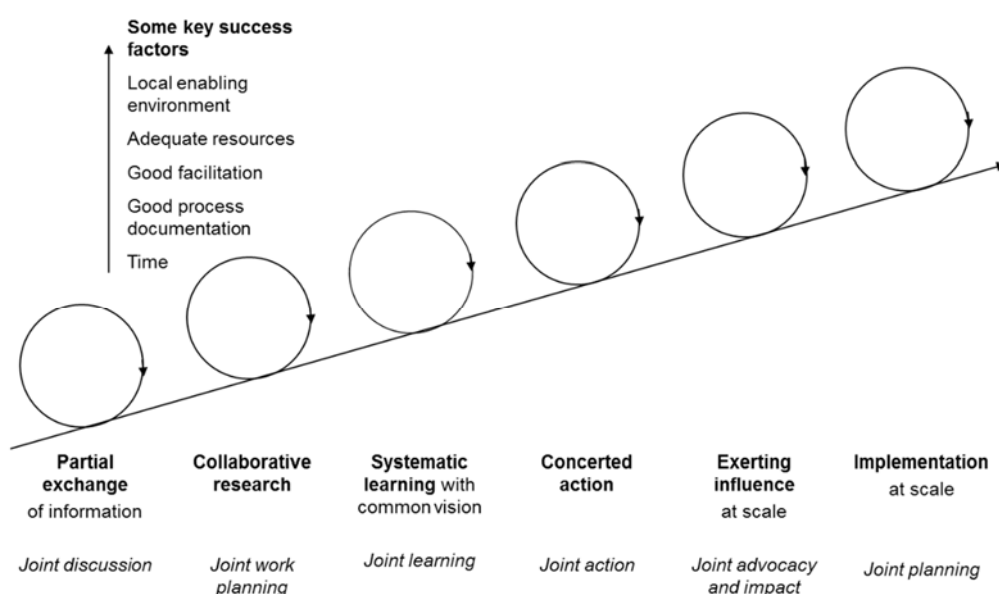


Figure 2-10 Progression of stakeholders' interactions in a learning alliance (Smits *et al*, 2007)

2.3.8.3 Sub-Framework for Analysing Social learning

One of the results of interactions and collaborations among stakeholders is social learning. We will therefore need to identify the routes through which learning occurs within the whole learning alliance process. Earlier in this chapter (section 2.3.3), reference was made to knowledge generation, knowledge sharing and knowledge utilisation as part of the learning process. We will explore how this happens within the learning alliance. In figure 2.10, we see some of the activities that are expected to lead towards learning within the LA. While the changes are not expected to be linear, the concept provides some criteria to compare outcomes from the learning alliance and allow the detection of any changes or learning. These are further discussed in chapter 6. The definitions of learning discussed in the previous sections point to a resultant change either at the individual level or at the

organisational level. This forms the basis to ask a question of whether learning alliances can lead to change.

Sol *et al* (2013) identify two factors as influencing learning; internal factors such as level of interaction and external factors such as power, hierarchy, time and money. Their study concentrated mainly on the internal factors but this study will extend to consider some of the external factors and the impact on learning within the learning alliance. The role of facilitator within the learning alliance and the role of formal and informal power relations are also considered.

Box 2.3 Sub-Framework for Analysing Social learning

Nevis, DiBella and Gould (1995): 3 aspects of learning

- Knowledge acquisition
- Knowledge sharing
- Knowledge utilization

These key concepts are used for analysis in ATLAS*i* ®

Hawkins *et al*, (2009): learning occurs at 3 levels

- Individual learning
- Organizational learning
- Institutional learning

Learning starts at individual level

Individual learning is influenced to some extent by different learning styles:

(global vs sequential, visual vs verbal, active etc.)

Evidence of social learning is change (Reed *et al*, 2010). Changes that can be observed:

- Changes in actions
- Changes in perceptions
- Changes in behaviour

Stakeholders in LAs are observed in order to identify whether there are any changes, what changes occur and why they occur.

2.3.8.4 Sub-frame for analysis of Innovation:

As pointed out earlier, innovation does not just refer to the development of new products but also includes process innovations, which means doing things differently. One of the results of the social learning process within the learning alliance is innovations. The key question here is, ‘in what ways do learning alliance or the social learning processes contribute to innovations?’. According to Moulaert and Hamdouch (2006) analysis of innovations involves a dynamic approach in which the innovations are analysed as a

process. The process approach, communication and learning are key factors that are assessed. Similarly, in this study the learning alliance process will be analysed through the process-based approach. The analysis will be in the context of the institutional (cultural, geographical, economic) set up within which they occur. This will allow the study to also capture the “culture” of innovations as proposed by Moulaert and Hamdouch (2006). Hawkins et al (2009) suggest that promoting change and learning are key to achieve innovation at all levels within an innovation system; catchment level, social level or organizational level.

This will partly answer research question 2 and partly research question 3. Based on the premise that they lead to change through learning, a further question will be. ‘how, and to what extent can learning alliances bring about change that can lead to innovation in urban water management?’

Box 2.4 Sub-frame for analysis of Innovation	
<p>Similar to learning, innovation occurs at 3 levels</p> <ul style="list-style-type: none"> • Innovation at Individual • Innovation at Organizational • Innovation at Institutional 	<p>Innovation Approaches (Hall et al, 2010a):</p> <ul style="list-style-type: none"> • Capacity-led approach • Communication led approach • User-led approach • Below-the-Radar • Public-Private-Partnership led • Investment led <p>This study focuses on the Capacity-led, communication led and user led approaches</p>
<p>Aspects of Innovation (Hall, 2010)</p> <ul style="list-style-type: none"> • Interaction • Knowledge generation and learning • Adaptation and use of knowledge 	

2.3.8.5 Sub-frame for analysis of Governance:

In the final analysis, a learning alliance is expected to lead to improvements in urban water management. The main issues here are what kinds of improvements can be expected, how soon they occur and how these changes are recognised. This is related to the outcomes of the learning alliance and the roles of actors in achieving these outcomes. A further question is ‘to what extent do these changes affect urban water management and the role of power relations?’. This will be the final focus of the research and will address our third research question to be explored by the study, ‘How do the social and institutional dynamics of

urban water governance relate to innovation in urban water management?’. The data and analysis on this are presented in chapter 7.

Box 2.5 Sub-frame for analysis of Governance

Gonzalez and Healey (2005) use social constructionist approach to assess changes in governance

- Specific episodes: considers various actors and their roles
- Governance processes: stakeholder interactions
- Governance cultures: roles of formal and informal structures, embedded culture

2.3.9 Research Questions

The objectives of the research were outlined in Chapter 1 (section 1.2). The overarching research question to be answered is: ‘How and to what extent can learning alliances stimulate, influence and promote individual and institutional change for innovation, as applied in integrated urban water management?’

To answer the research question, the following sub-questions have been developed.

Sub Question 1 How can the learning and innovation processes of city learning alliances centred on Integrated Urban Water Management and Governance be described and analysed?

1a. What is a city learning alliance in practice?

- who are the members of the learning alliance?
- what are the activities and mechanisms of learning/learning alliance?
- How does a city learning alliance get started?

1b. What inputs and conditions are needed to sustain a multi-stakeholder process relating to IUWM?

Sub-question 2: How does learning occur and to what extent does it go beyond the LA platform within a city to influence change and innovation in IUWM

2a. What are the factors that support or prevent learning within a city LA?

2b. What are the processes through which multi-stakeholder platforms/learning alliances can contribute to innovation in (more sustainable/integrated) urban water management?

(e.g. strategic planning, demonstrations, collaborative research, collaborative implementation, joint studies)

Sub-question 3: How do the social and institutional dynamics of urban water governance relate to innovation in urban water management?

This sub-question will be answered by identifying the early outcomes of learning alliances and by mapping and assessing the influence of power relations and dynamics on the process of learning.

2.4 Summary and Conclusion

Summarising from the previous sections, it is noted that;

- Learning Alliances have recently emerged in the water, sanitation and hygiene sector as a promising approach to problems of scaling up innovations.
- Learning Alliances are expected to accommodate the complex nature of innovation systems and to facilitate multi-stakeholder processes to achieve more effective and appropriate local innovations, as well as capacity development of sector stakeholders to sustain innovations and adapt and replicate them elsewhere.
- The use of the learning alliance as an innovation system for IUWM presents a good case study since literature regarding its use is limited. Critics of IUWM say that even if the technical aspects are feasible, the implementation in practice is difficult due to challenges of getting stakeholders to work together.

From the review of various innovation theories, it is understood that innovation involves complex interactions between different stakeholders. Innovation and Innovation systems can be viewed from a technological or scientific, an economic or sociological angle. Some of the different viewpoints focus more on product innovations and others focus on the process. Fundamental to the process of innovation is the creation and exchange of knowledge and learning. The innovation process is affected by socio-economic, organisational and institutional settings of the system within which it takes place. There is often some value or gains for innovation.

Based on the conceptual framework described in this chapter (section 2.3.8), the study will assess the extent to which the complex interactions between stakeholders lead to learning, innovation and improved governance. The research question to be answered is: ‘How and

to what extent can learning alliances stimulate, influence and promote individual and institutional change for innovations; as applied in integrated urban water management?’

Having clearly outlined the underlying theories and conceptual framework for this study and the research questions, the next chapter will describe the methodology that was used to find answers to the research questions.

3 Research Approach and Methodology

3.1 Introduction

This chapter outlines the methodology employed for the study. This research mainly makes use of a qualitative approach with some quantitative methods. The selection of the methodology depends on the following (a): the type of research question posed, (b) the extent of control an investigator has over actual behavioural events, and (c) the degree of focus on contemporary, as opposed to historical events (Yin, 2003). In this study, the questions posed can be described as “how” and “why” questions (see section 3.3). Secondly, although the researcher was an active participant in the events being studied, she did not have control over the actual behaviour of other participants and the outcomes of the activities. Thirdly, the focus of the study was on a contemporary event. These three conditions lend support to the selection of the case study approach and are further explained in the next section. This is followed by the research procedures and methods used for data collection, organisation and analysis. Details of the sampling framework are given. Limitations to the study are also described in this chapter.

3.2 Justification for the selected methodology

3.2.1 Case study Research

A case study is defined by Yin (2003) as ‘*an inquiry that investigates a contemporary phenomenon within its real life context especially when the boundaries between the two are not clearly evident*’ (p.13). According to Yin, it attempts to answer how and why events take place in relation to decisions that are made and the results that are obtained. Case study research is one method that excels at bringing out an understanding of a complex issue and emphasises detailed contextual analysis of a number of events or conditions and their relationships (Dooley, 2002). The complexity of the urban water management system as demonstrated in the previous chapter requires the use of the case study method. Secondly, the relatively new use of LAs in urban water management provides a reason for applying the case study approach to a contemporary event. The LA process being studied was ongoing at the time of the research and therefore provided an opportunity to study it in its real life context (Yin, 2003).

While one can start with a general theoretical framework for the design of the study, case studies can also contribute to theory building – which means that one does not have to start

with a theory (similar to ethnography). According to Dooley (2002), ‘case study research has the ability to embrace multiple cases, quantitative and qualitative data and to embrace multiple paradigms and thus contribute in a holistic way to all phases of theory development’. Eisenhardt (1989) suggested that ‘theory developed from case study research is likely to have important strengths such as novelty, testability and (empirical) validity’. In applying case study research to theory building, the case study researcher is usually interested in understanding a specific phenomenon by observing all the variables and their interacting relationships from which the start of a theory may be formed (Eisenhardt, 1989). While this study starts from a conceptual framework and may not have enough data to build a formal theory, it makes use of enough evidence to generalise. It first works from general theoretical concepts (deductive -inductive approach).

The case study method was relevant for this study because it focused on a contemporary event which was the development of Learning Alliances (relatively new in the WASH sector) and the researcher, even though she was a key player (a facilitator who planned activities and tried to influence stakeholders), she had limited control over the results and the responses of other actors in the process. Meyer (2001) referring to earlier research, indicates that an important advantage of case study research is the opportunity for a holistic view of the process: ‘*The detailed observations entailed in the case study method enable us to study many different aspects, examine them in relation to each other, view the process within its total environment and also use the researchers’ capacity for “verstehen”*’⁵. This refers to subjective understanding of the researcher who attempts to relate to the context being studied and to understand others.

Other researchers also point out the advantages of case study research and the conditions which make them suitable. Some of these are summarised as follows:

- It is applicable in a situation where behaviours cannot be manipulated (Burns, 1990; Yin, 2003)
- Allows for phenomena to be studied in their real life and total context (over a period of time) (Yin,2003)
- Helps to develop an understanding of a complex issues (Dooley, 2002)

⁵This term is associated with German sociologist Max Weber. It refers to “subjective understanding that includes an appreciation of meanings to individuals and groups”

- Ability to use multiple sources and techniques for data collection (Hammersley and Atkinson, 1983)
- Has the aim of probing deeply and analysing intensively to generate rich data (Burns, 1990)
- Allows a researcher to reveal the multiplicity of factors that have interacted to produce the unique character of the entity which is the subject of study. May be the best possible description of a unique historical event.

The methodology of this study follows a descriptive single – case study covering the subject of learning alliances with embedded units of analysis (the cities in this case are considered units of analysis within the learning alliance). To define a case, one needs to take into cognisance the setting, the actors and activities of the real life case being studied. The main unit studied is the learning alliance. The case study focussed on the evolution of learning alliances in the area of Integrated Urban Water Management and how they were used to facilitate improved governance and institutional change that would support learning and the scaling up of innovation. Given the limitations of the single case study, it is desirable to include more than one case in the study (Meyer, 2001). Part of the study looked at two subunits at different levels; the Learning Alliance in Accra and the Learning Alliance in Birmingham which represented two different geographical, institutional and economic environments. The choice of the two different cities in different settings was to allow for comparison, because case studies and ethnographic research are liable to some level of bias and one way to respond to these biases is by applying a multi-case approach (Leonard- Barton 1990). Multiple cases (in this case the different cities) augment external validity and help guard against observer biases. Moreover, multiple sampling adds confidence to findings and helps us to generalise. By looking at a range of similar and contrasting cases, we can understand a single-case finding, grounding it by specifying how and where and, if possible, why it behaves as it does (Miles and Huberman, 1994). However, the desire for depth and a pluralist perspective and a need to track the cases over time, implies that the number of cases (units) must remain small (Meyer, 2001). As this research had complementary study units (Learning Alliances in different cities), there was the opportunity to deal with the limitations of a single case, but at the same time provide an optimum number that would allow an in-depth study on Learning Alliances.

The selection of additional cases or units was guided by recommendations of Pettigrew (1990) and Meyer, 2001. The aim was to find cases that provided variation in the contextual factors, thus representing polar cases (in this case a highly structured and developed setting in contrast to a currently developing setting). In terms of the context, these two cases differed in the governance and institutional structure, power relationships and economic conditions. This allowed the emergent innovative properties/learning from one city to be compared and contrasted with another city, given different settings. This is one of the ways of improving the validity of research findings and the extent to which the results could be generalized. The learning alliance attempts to bring together stakeholders from different levels of governance (national, city and community) on to an 'equal' level platform.

A major strength of case study research and ethnography (Hammersley and Atkinson, 1983) is the ability to use multiple sources and techniques for data collection. It is important for these multiple sources of data to be collected and stored in a systematic manner (Dooley, 2002). The sources used in this study can be broadly categorised into literature review and field data.

A literature review and a critical analysis of existing theories relating to sustainable development, integrated urban water management, innovation and learning alliances, innovation [among others] was conducted. This critically reviewed the research work that had already been undertaken on the subject of study to identify the current state of knowledge as well as gaps requiring research. According to Dooley (2002) a literature review can also add face validity to the research. The literature review was used to develop the conceptual framework and guide the refinement of the research questions and the discussion of findings. Books and other journal publications on qualitative research and ethnography were used in further developing the methodology and approach. Extensive reading was done on soft system theories, organisation, governance and innovation. The research makes reference to documents relating to the history and use of learning alliances and the conditions and situations in which they were formed. Even though literature on learning alliances is limited because the concept is relatively new; one source that gives a lot of insight into the process is the book "Learning Alliances" by Smits et al, 2007. This book provided an insight into the theories behind learning alliances, the structure and process of learning alliance formation as well as some of the initial findings from various projects that have tried the approach.

All the literature reviewed has been duly acknowledged and indicated in the references section.

In applying the case study methodology for this study, it is important to state my role as a key actor in the topic being studied. The researcher was a facilitator in the learning alliance process. This allowed the researcher, using an ethnographic approach, to make use of her experience within the process as part of the study (see next section).

3.2.2 Ethnography

The fieldwork for the case study followed principles of ethnography. Moeran (2007) describes ethnography as the writing up of research which is based on qualitative research using fieldwork, which is an ‘intimate participation in a community and observation of modes of behaviour and the organisation of social life’. According to Moeran, the process of writing should be distinguished from interacting with people, but this is not usually so and the process of writing is never entirely separate from the process of field work. Ethnographic field work and other variants such as organisational ethnography, embrace principles of comparison, holism, humanism, and combine subjective participant and objective observer perspectives and this makes it a well-accepted method of study of people in various settings (Moeran, 2007).

These principles provide a stronger framework for a detailed investigation and analysis of social interactions than other philosophical approaches. According to Hammersley and Atkinson, 1983 (1983), neither positivism⁶ nor naturalism⁷ provides an adequate framework for social research because they both neglect the fundamental need for reflexivity, in that we are part of the world we study. They further argue that by including our own role within the research focus and systematically exploiting our participation in the world under study as researchers, we can develop and test theory without placing reliance on futile appeals to empiricism of either positivist or naturalist varieties. Ethnography is not limited to theory development but can also be used to test theory (Hammersley and Atkinson, 1983). There are however some limitations of ethnography which can be found in the features identified by Hammersley and Atkinson (1983);

⁶ Positivism refers to ontological position where emphasis is placed on phenomena that are directly observable

⁷ Naturalism refers to the ontological position which proposes that the social world should be studied in its natural state undisturbed by the researcher. (Hammersley and Atkinson, 1983)

- The emphasis on exploring how a social phenomenon occurs instead of setting out to test a hypothesis
- Working mainly with unstructured data that may not have been coded
- The investigation of a small number of cases and
- Data analysis that involves the interpretation of mainly qualitative data made up of meanings of human actions and verbal descriptions.

These limitations can however be dealt with during the design of any such study. Within this study, these limitations were considered and the needed steps taken to reduce the impact. Since ethnography investigates processes in their everyday settings rather than in those set up for purposes of research, the danger that the findings will apply to only the research situation is generally lessened. In addition, the use of multiple data sources avoids the risks that arise from the reliance on a single data set. Examples of these multiple sources of data used are interviews, workshop reports and accounts of participant observations made. This provides a basis for triangulation in which different kinds of data may be compared to deal with reactivity and other threats to validity (Hammersley and Atkinson, 1983). Section 3.3.2 gives some of the steps taken to ensure the validity of the methodology that was chosen.

3.3 Research Procedures

This research explores the extent to which learning alliances influence and promote individual and institutional change for innovations, using Learning Alliances in the SWITCH project as the study unit. In particular, the focus is the Accra Learning Alliance for reasons of ease of access to information. Since one of the issues around learning is the local setting, another city with a different socio-cultural and economic background was considered. The city of Birmingham in the UK was selected for this purpose. Some secondary data was also obtained from other cities to allow a comparative analysis from which to draw generalisations and contrasts. These cities, how they got involved in the SWITCH Project, as well as the structure of their learning alliances are described in chapter 4. The researcher's involvement with SWITCH as a Learning alliance facilitator could introduce some bias in this account. However, to reduce partiality and bias, multiple sources of information are used (section 3.3.2). Secondly, following the best practice principles of process documentation (Schouten, 2007) the part of the researcher's experience which is presented aims to be self-critical and reflective.

Regarding the field data for the cases described in this study, data was collected over a period of 30 months within which it was expected that sufficient data to support the detailed analysis of the cases would have been collected. Data from Accra was collected on a fairly continuous basis, while data from Birmingham was collected within two periods (August 2008 and April 2010). This is because the researcher was situated mainly in Accra and had the opportunity to visit Birmingham twice. Information obtained from these visits was complemented by other project information and reports from Birmingham.

3.3.1 Data Collection and Sampling Frame.

Qualitative sampling selects the cases purposefully rather than randomly in order to obtain rich information which is usually the objective of a qualitative study (Crabtree and Miller 1992; Meyer, 2001). Field Data was collected through interviews, observations, progress reports and workshop reports. In addition, two meetings were video recorded. There were some taped interviews and video interviews, field notes were also made. Three levels of sampling were used

- Among SWITCH consortium members
- Across cities
- Stakeholders within cities

For the larger SWITCH consortium, scientific meetings provided access for me to interview researchers. The interviews with other SWITCH consortium members provided information for comparison of issues coming out of the selected cities. These interviews helped with drawing general conclusions particularly with respect to the design and structure of learning alliances and the project. Within the project, there were 12 cities that had Learning Alliances; Chapter 4 explains how these cities were selected to be part of the project. Access to cities influenced my selection of cities for the study. I selected Accra and Birmingham as my primary study sites. In Accra, I used my contacts from Learning Alliance meetings to access stakeholders. Access to stakeholders in Birmingham was provided by the learning alliance coordinator and facilitator in the city. For cities where there was no direct or regular access, I used secondary data to provide information for cross-comparison.

Members of Learning Alliances in two cities, Accra and Birmingham were interviewed. Other individuals from stakeholder organizations were interviewed. Particularly in Accra where I had access to a cross section of stakeholders, those interviewed included those who

attended LA meetings and those who did not. These included people from Government Ministries, Departments and Implementing Agencies, Civil Society organizations, donor partners and the members of the partner institutions of the SWITCH Consortium. Both local (Accra) and external researchers from other institutions in the consortium were interviewed.

The following gives the sources of evidence for the research. These sources were selected keeping in mind considerations for validity and to ensure that a credible line of evidence was followed:

- **Interviews and structured questionnaires:** Various learning alliance members including key stakeholder and researchers were interviewed (see Appendix 6). These instruments were designed to provide an understanding of the background of various stakeholders and their experiences within the learning alliances. The responses provide information for analyses of stakeholder experiences (described in section 6.5). Efforts were made during the selection of interviewees to ensure that they were representative of the Learning Alliances that were studied (table 3.1). The sampling criteria were such that each stakeholder group was represented: researchers and users. Among the users there are different levels (government/ policy makers, implementers, and consumers/community members); the number of persons to be selected was sufficient to cover all these stakeholders. In Accra, the number of times people participated in the learning alliance was also used as a basis for selection for interview. People who attended all, or most of the meetings were interviewed and compared to those who attended only some or none of the meetings. For non-members, the criteria were those who had at least heard about the SWITCH project or knew about learning alliances, or had experience and an overview of the water sector in Accra which the project was trying to change and had ideas about what to change. This allowed representative perspectives across different stakeholder groups in the city. For general issues concerning the LA, a common questionnaire was developed and administered to the selected stakeholders. On issues for which trends over time had to be checked, these questions were asked continuously over the study period. An example is the evaluation of workshops which was conducted after every workshop type activity. Some of the interviews were conducted after LA meetings and others were conducted in the offices of the stakeholders. Once stakeholders were identified as potential interviewees, appointments were scheduled with them, explaining the purpose. Interviews were

carried out with at least 50 stakeholders. Most interviews went well and some stakeholders were enthusiastic about sharing information. Some were however reticent and sometimes gave very short answers. The use of an interview guide facilitated the elicitation of answers from stakeholders. In Birmingham, sampling was just based on people who had participated in LA meetings. The interviewees were predominantly male. This is related to the fact that most of the participants in the learning alliance were male. For example, in Accra all female participants in the learning alliance were interviewed, however in view of the fact that most participants in the learning alliance were male, the numbers of males interviewed were more. The SWITCH consortium members in Accra however had more women as researchers and facilitators. Participation in the LA was skewed towards men since most of the institutions were represented by men. This underscores the need for more women in policy and other areas within the water sector. It is however, worth noting that even though most participants were men, the few women that participated were vocal and led some of the processes. In Accra and Birmingham, there were facilitators of the process who were women. Similarly, in most other participating SWITCH cities, the facilitators were women despite the predominance of men in the consortium.

Table 3-1 Stakeholder Categories of Interviewees

Stakeholder Group	Interviewed in Accra	Interviewed in Birmingham	SWITCH Consortium
Government Ministry/Policy makers	8		
Municipality	6 (M)	2 (M)	1
Regulatory Agencies	4 (2M, 2F)	2 (M)	
Implementing Agencies	5	2(1M, 1F)	1
Civil Society	1 (M)	1 (M)	
NGOs	2 (M)		
Media	1 (F)		
Development partners	6 (5M, 1F)	1 (M)	
Academia/ researchers	4 (3F 1M)	4 (3M, 1F)	8
Facilitator/coordinator	-	3 (1F 2M)	
Total	37	14	10

- **Project Documentation:** reports (workshop minutes and reports, meeting reports, assessment reports, articles, briefing notes, emails, letters, project proposal, notes or diaries). Journals or diaries served as a very important source of documentation to validate and support data analysis. It allowed the researcher to record her own

perspectives on the system and emerging theories as the research progressed. A good journal could include reasons for decisions that are made and is useful during analysis. The record can form the basis of the researcher's narrative analysis for the final report and can allow the researcher to trace her thought processes when in doubt (Lacey and Luff, 2007). In this study, the researcher's experiences as an active participant were recorded in a 'reflections' document. Secondary data from SWITCH city assessments were also used to validate data. Some documents important to the researcher were there from the conceptualization of the Project; for example, the project documents and Description of Works which provided an insight into the theory of change for the project. Sometimes they provided answers to questions I had on the original objectives of the project which sometimes were paraphrased in interviews. In Accra, I had access to letters that were sent to invite stakeholders as well as those which were sent to invite the researcher to other meetings. The following is a list of secondary data that I used to support the stakeholder interviews and observations.

1. List of stakeholders and their participation in meetings
 2. Categories of stakeholders (initial scoping report+ stakeholder analysis)
 3. Diagrams of stakeholder perceptions of other stakeholders (relationships, spider diagrams)
 4. Quarterly reports of learning Alliances
 5. Some city blog stats from the learning alliance blog
 6. City assessment interviews/ notes from city assessment workshops 1 and 2
 7. LA workshop reports
 8. Annual City story which presents an annual report of learning alliance activities in the respective cities
 9. Institutional map for Accra and Birmingham
 10. Workshop Evaluation reports
- **Direct observation / Participant observation in** learning alliance meetings and activities. In this study, the researcher was an active participant (facilitator) of the learning alliance process in Accra. Observations at meetings were made in the form of notes from the meeting which were typed up later into reports for the meeting. Sometimes participant observations allowed observations to be made about power relations which people might not have mentioned during interviews. This is because it is sometimes sensitive to talk about who has power. This was evident in responses to the questions on which stakeholder group has the ability to influence the group and

their organizations, which is discussed in Chapter 7. Stakeholders who are seen as “powerful” were also not easily accessible, but did attend a couple of meetings. Also those who had relative influence sometimes were reserved in their responses to some questions. Their answers can be described as ‘diplomatic’. Videos of some meetings provided further information to compare observations made. I attended at least 20 meetings in Accra and other SWITCH Cities; these are shown in table 3.2 below.

Table 3-2 Meetings attended by the researcher

Meetings in Accra	General SWITCH Meetings
5 Learning Alliance meetings,	1 st and 2 nd Learning Alliance Sharing Meeting
4 Training Workshops	2 nd , 3 rd , 4 th and 5 th SWITCH Scientific Meeting
1 Learning Alliance Policy Forum	1 st and 2 nd SWITCH City Assessment Meetings
1 National Level Learning Alliance Platform in Ghana	SWITCH City Summit

I also attended one Learning Alliance Meeting in Birmingham.

Participant observations were also documented in a process reflection journal that covered the period from the start of the learning alliance in January 2007, to November 2010. These reflections provided observations from the researcher’s view point regarding events and activities and show the researcher’s own journey in the setting up and management of the learning alliance. A review of the reflections also shows the researcher’s own initial scepticism about the learning alliance. These reflections were later compared to the views expressed by stakeholders in interviews to ensure that the researcher’s biases were not introduced into the conclusions and recommendations. The observations noted in the reflective journal were detailed, as the observations were written as the event happened. Other notes were just summaries as I reflected on them after the event. Excerpts from my reflective journal are provided in Appendix 3e.

3.3.2 Validation of Data

For qualitative research, the validity and reliability of the data collected is important, especially when the researcher is also a key actor in the system being studied. For this study a number of measures adopted from Yin (2003) were put in place to ensure the validation of observations and interpretations. These checks and balances are validity (construct, internal and external) and reliability checks. How they are described by Yin (2003) and applied in this case study are presented as follows:

Construct validity requires the researcher to select the correct tool or method for the concepts being studied. This is done during data collection and organisation. During this study, it was ensured that a wide range of stakeholders were selected to allow for multiple viewpoints. By having representation from the different stakeholder groups, the researcher was able to obtain different information and a wide range of perspectives from stakeholders in order to reduce bias and ensure greater accuracy.

Internal validity demonstrates that the conditions being observed will necessarily lead to other conditions. This is done during data analysis. The data analysis is supported with quantitative analysis to illustrate trends such as the frequency with which people attended meetings and their level of participation; this was compared to responses to identify any patterns or direct correlation with responses.

External validity determines if the findings can be generalized beyond the case being studied. This involves interviewing a lot of individuals, making different observations and comparing results, and relating observations to existing literature. During the design of a sampling framework, it was ensured that a wide cross section of stakeholders was selected for interviews. In addition, workshop reports and videos were used to compare observations. Thirdly, participants from other cities were interviewed. Cases of the various learning alliances were compared as well as an example of a project that had applied a learning alliance process. The comparison across cities provided data on different factors which had effects on the same phenomenon or otherwise, thereby improving the accuracy of judgements made regarding these occurrences. This allowed the identification of emerging phenomena which were common or atypical.

Reliability refers to how well the process is documented to ensure replication⁸. This is done during data collection. During this study, the procedure for data collection and basis for sample selection was recorded and has been described in this chapter. In order to ensure that the conclusions drawn from the study are reliable, feedback from participants and interviewees were considered carefully. As mentioned, participant observation was used together with interviews to identify certain behaviours/motivations which were not shown in the interview and vice versa, the interview combined with participant observation allowed the researcher to identify issues which were not easily identified during meetings/in group conditions. During the interview, whenever a stakeholder made a point that was linked to the hypothesis or conceptual framework (regarding interactions, collaboration and learning and innovation) I solicited more information on examples, or links to documents where further information could be obtained. I ensured that transcripts of interviews were sent to interviewees for further comments. I also indicated to the interviewees that the results of the study would be shared with them for comments. I used a timeline of the project and reflective diaries on key events. These procedures allowed the researcher to check that the conclusions drawn were not unduly influenced by the view of the researcher.

3.3.3 Data Analysis

The raw data was organized into groups to identify which research question they would answer. I did a content analysis of texts from interviews and documents to identify the themes emerging and to assess how the themes relate to each other and to learning and innovation. An example of a theme emerging from the interviews include the use of knowledge and knowledge products from the learning alliance. Another emerging theme was networks formed as part of participating in the learning alliance process. I followed an iterative process of reading and re-reading text, comparing results and findings with literature reviewed. As I read and re-read the transcripts of interviews and looked over my notes from observations made, I identified significant issues and compared across context to find any explanations for what happened. I compared findings across cities to find any common thread or to identify differences and find contextual explanations for these. In

⁸ In a positivist context replication implies that when the experiment is repeated under the same circumstances with the same subjects, it is expected that similar outcomes will be obtained (Shenton, 2004). In a qualitative approach however, given that the results are to a large extent dependent on the existing situation at the time of the research, reliability is to ensure that due research process has been followed and another researcher can conduct a similar study using the process as a guide even though different results could be obtained depending on the context of the study.

order not to introduce bias based on the influence I had as a researcher, I wrote up my reflections and compared them with some of the findings (i.e. categories and explanations generated from data collected) to ensure that they were based on the evidence supported by data and not on my opinions. This further reduced project bias which tends to make one look out for only successful events. I also did a quantitative analysis to look at how many times particular stakeholder groups attended meetings and to compare the number of stakeholders from the beginning to the end of the project. I also identified how many of the original stakeholder groups were left in the learning alliance of the end of the project. The findings and discussion of results are presented in Chapters 5 to 7. Descriptive narratives are used to present the data and give a picture of what happens and how it happens, to provide a background and context building explanations on why it happens. This manner of presenting data analysis in a descriptive narrative is a typical feature of qualitative research.

Data Analysis and development of inductive categories

For coding, I closely followed steps described by Richards (2005) who identifies three types of coding: descriptive coding, topic coding and analytical coding. The Descriptive coding refers to coding of information about characteristics or attributes. Topic coding assigns the paragraphs in the transcript to topics very often with little interpretation. This is often done during the initial stages of coding when more in depth understanding of the data is still to be developed. Analytical coding is associated with interpretation and consideration of meanings of paragraphs in context.

As noted by Richards (2005), these three steps of coding are sometimes not clearly distinguished from each other and in my own observation I made use of all these three types of coding in my work. During interviews, I asked about the background of each stakeholder and this provided me with information for descriptive codes. The information obtained for each stakeholder's background includes:

- Age group
- Gender
- Organization/ Stakeholder Category
- Number of years in the organization/water sector
- Role in organisation

The attributes of stakeholders were summarized and stored in an excel table. Part of the table is extracted and shown in appendix 3d.

Regarding topic coding, I made use of topics that I had in mind before starting the analysis and topics that emerged from the analysis. The research design identified the following topics based on the literature review and conceptual framework:

- Learning alliance
- Interaction and collaboration
- Social Learning
- Innovation
- Governance

The first step was to identify points where stakeholders talked about the topics and what the stakeholders said.

The third level of coding which I used to develop meaning from the data obtained is the analytical coding. This was done in conjunction with coding the topics. As I labelled paragraphs with the appropriate topics, I considered the meaning of the words and the context in which they were used and the inferences that could be made. This helped me to identify themes and categories that were inherent in the paragraphs.

I used a software ATLAS ti ® to facilitate the coding process. Atlas is described as a “Knowledge workbench” which serves as a tool for the analysis of qualitative data. Atlas is based on the grounded theory methodology and facilitates the systematic organisation of data to assist in generating theory out of qualitative data. While I was not using a purely grounded theory approach, I followed the steps of developing inductive categories. Atlas therefore served as a useful tool for organizing my data and identifying categories. It allowed me to make notes on my data for easy referencing and retrieval. This was an improvement over my initial process of tabulating similar responses as a way of organizing information. I renamed the transcripts with the numbers assigned to the stakeholders interviewed. The interview transcripts were imported into Atlas as primary documents.

I read through the transcripts and using the Atlas I made notes on initial categories. The first step was to assign codes and topical labels to the paragraphs. For each topic, sub-themes were identified. The second step was to read through the list of codes and refine

them. This was done by merging those that had very similar meaning and grouping those that talked about the same thing but in different ways, into code groups. In my context analysis, I looked at the context within which people made reference to a topic/theme, who are these people and what their attributes are; such as stakeholder group, position in organization. This was done by linking the codes to the different categories of interviewees to obtain specific quotes for further analysis. For example, for a code group such as “Time/Time Constraint”, I identified which stakeholder made the statement and the context within which it was made. I analysed why statements were made and the linkage with the learning alliance. I noted that “time” was often linked to people’s day jobs and their ability to participate in learning alliance meetings. I compared those who mentioned time as a constraint to the stakeholder group to which they belonged and their position within that organisation as well as other descriptive categories that had been identified. I also explored how “time” was related to other quotes and codes; whether they were similar or very different. I also made use of memos to make notes of what to follow up on when I reviewed the transcripts of the interviews. An example of the use of memos is provided in the figure below:

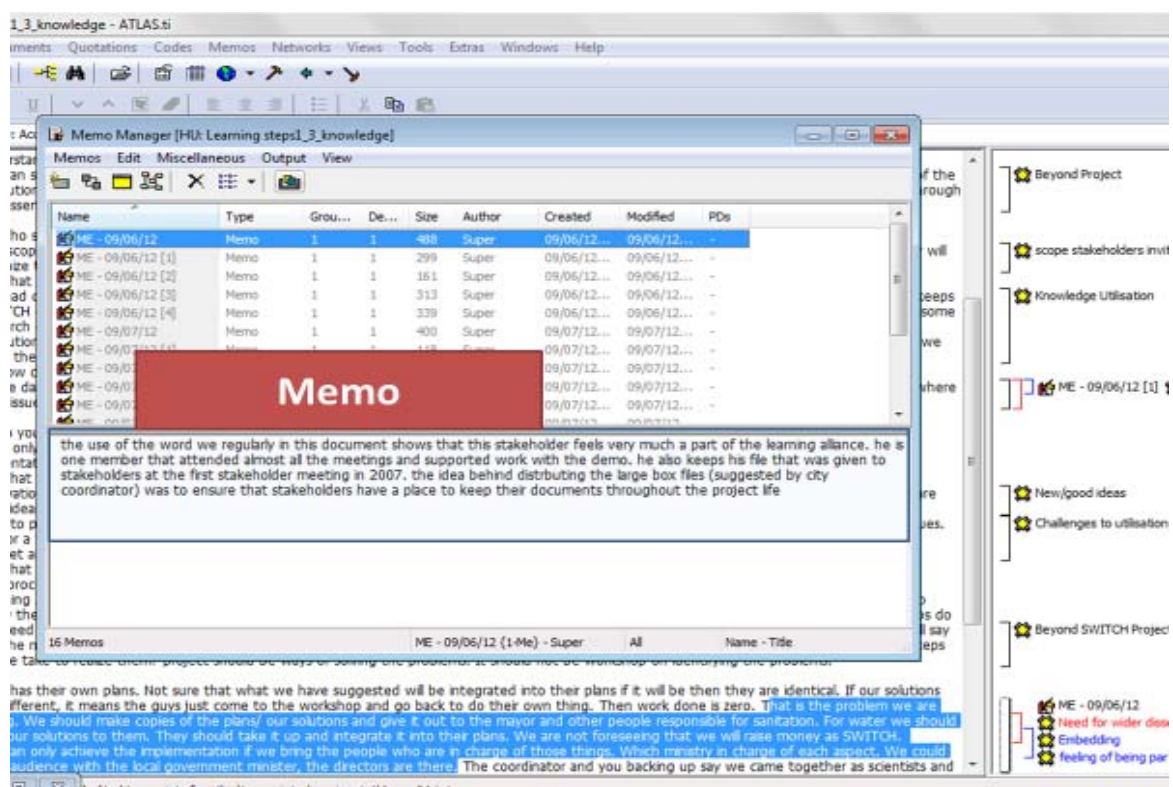


Figure 3-1 Example of Memo created as part of analysis using ATLAS.ti®

Another Atlas tool that I used is the creation of ‘families’. A family table allowed the researcher to organize the results of a survey, for example to group people by educational background, or age, or organization where they work. Creating families allows the comparison of how people of the same family respond to a particular question. I created multiple families using different characteristics of stakeholders such as their organisations and their age. Family groups helped to identify how stakeholders in the same category responded to the same question or what they said about a particular theme. This allowed for comparison of different responses and experiences within groups and across groups. For example, on the topic of Dissemination of information, some of the comments retrieved from stakeholders in a particular group are shown below.

Box 3-1 Examples of Stakeholder comments linked with ‘dissemination of information’ retrieved from analysis of transcripts using atlas

P 3: _v1_BD.docx - 3:8 [will be with the dissemination..] (18:18) (Super)⁹

Codes: [Dissemination of information]

“[impact of learning alliance] will be with the dissemination; a lot of the research projects are coming to fruition they are developing tools of some sorts; it is important with getting the results out to LA members. They have been engaged more with the local research especially city water. Though I think it will be important to get them introduced with the wider outputs of Switch so people know where to get what e.g. links to online training etc”.

P 4: _Bham_v1_BD.docx - 4:8 [put together a seminar on th..] (27:27) (Super)**

Codes: [Dissemination of information]

“put together a seminar on the outputs of SWITCH and bringing them in we could share with them”

P 6: _Bham_v1_BD.docx - 6:5 [For my parent organisation; di..] (21:21) (Super)

Codes: [Dissemination of information]

“For my parent organisation; dissemination of information from SWITCH panel; if information is not widely disseminated, then you limit the potential of the activities by SWITCH to make impact...”

P 6: _Bham_v1_BD.docx - 6:11 [I would again reiterate the ne..] (39:39) (Super)

Codes: [Dissemination of information]

“I would again reiterate the need for dissemination and the wider role of stakeholders; if there is a report at end of the project, then you have to rely on someone to read the

⁹ This line in bold is a label for the quote that refers to the primary document and the quotation number as well as line number within the transcript.

report; if some information is disseminated earlier than the end of the project then they can start something earlier than the end of the end of the project. Don't know how info is disseminated to people who are outside and are not stakeholders in the project.”

P 7: _v1_bd.docx - 7:2 [complete all research and get ..] (124:124) (Super)

Codes: [Dissemination of information]

“complete all research and get it published; disseminate results more widely”

The quotations are then further analysed to develop sub-themes, linkages with other codes and topics and to develop explanations.

While developing codes, I constructed a network map using the codes as nodes. I used the network map function to build linkages across themes emerging from my analysis. I was able to group codes and identify the linkages across these codes. The network diagrams helped to create a mind map, conceptual frame or theory about the data and the relations among the codes. By using this map, I could build explanations and make further references to quotations by the stakeholders. Using the network diagrams also helped me to refine codes and express them more precisely. The following diagram shows a segment of one of the initial network maps developed using Atlas. As codes and categories were refined, the network maps were also updated. These provided input for the narratives of my findings and discussions (Chapters 5-7).

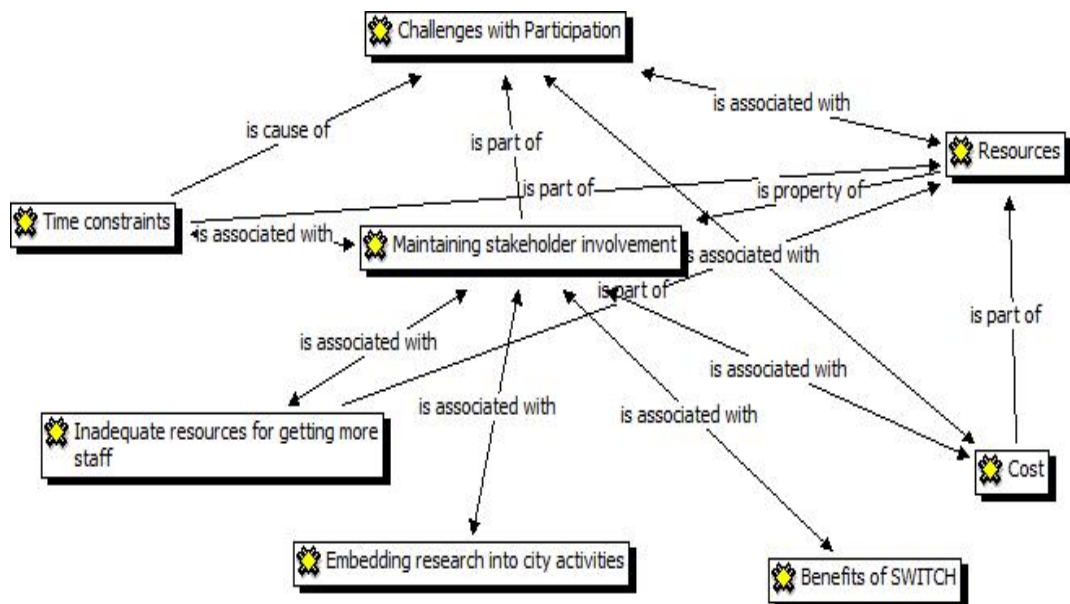


Figure 3-2 Example of Network Diagram developed in ATLAS ti®

3.4 Ethical considerations

It was ensured that the research conformed to the University policies regarding research ethics. The data collection and storage process followed the NRI Code of Practice on Research with People, under the University of Greenwich research ethics policy. The University policy requires research to have Ethics committee approval when the aim of the research or the method of the research involves human or other sentient subjects or human tissue, and it involves harmful or criminal, or sensitive or extremist subject matters or research protocols (University of Greenwich Research Approval). Since the research did not fall into this category, clearance from the University research ethics committee was not required when this research began.

While collecting data, the researcher ensured that participants were informed of the purpose and reason for the data that was being solicited. This is in view of the fact that stakeholders may not want their views to be captured and put in a report. Permission was therefore sought from the stakeholders and interviews were conducted after the interviewee granted permission for the interview to be done. After the interviews, copies of the interview transcript were sent to them for corrections.

Another issue that was carefully considered was confidentiality of the identity of interviewees; especially those who wanted to remain anonymous. All identities of interviewees have been protected. They were informed that their names and identities will be protected and where specific references needed to be made, permission would be sought. This was done for all stakeholders. After transferring the transcripts, the names of the stakeholders were coded by giving each one of them serial numbers to protect their identity. Where names are referred to create identities in Chapter 6; the names have been changed and thus names presented in Chapter 6 are not the real names of the stakeholders.

3.5 Summary of Chapter Three

This study adopted an ethnographic case study approach where the researcher was an active participant in the process being studied. Data were collected mainly through interviews. Interviews were carried out with more than 60 stakeholders and researchers from the SWITCH Consortium. The design of the sampling framework was such that it allowed the perspectives of different stakeholders (policy makers, implementers, researchers, farmers and community members) to be explored. Other data included

observations from 20 project meetings, project documents, meeting reports and evaluation forms filled by stakeholders. Data was analysed using content analysis and validated through the use of multiple sources of evidence. The findings and discussion of results are presented in Chapters 5 to 7.

4 SWITCH Project: A model for the use of learning alliances

4.1 Introduction

This chapter provides a context for the analysis of Learning Alliances as an innovation mechanism in contemporary urban water management. The SWITCH project, and more specifically, the City Learning Alliances that were central to the project within which the research was conducted, are described. While SWITCH is not the first project to have used it, the concept of learning alliances was relatively new in 2005 when the project was conceptualised, and not widely tested in the water sector (Smits *et al*, 2007) at the start of the project. Learning alliances were not only at the centre of the SWITCH approach, but also a subject of the action-research undertaken by SWITCH. This PhD research is one of the action research activities conducted within the project. Information presented in this chapter is based upon:

- a. A review of SWITCH and other project documents.
- b. A documentation of the researcher's own experience within SWITCH as a learning alliance facilitator, and
- c. Interviews with members of the SWITCH consortium and City Learning Alliances in Accra and Birmingham

The chapter begins with a description of the concepts, design and formation of the SWITCH project, the project consortium and goals. After outlining key elements of the SWITCH project methodology, the approaches used for the establishment and development of city learning alliances are described. Two city learning alliances in Accra and Birmingham are described in detail. The chapter concludes with a discussion of the linkage between the learning alliance processes and the conceptual framework for this study.

4.2 SWITCH: A paradigm shift in Urban Water Management

SWITCH was a large-scale research and demonstration project comprising 33 consortium partners from 15 countries around the world. These partners represented over 100 professionals with diverse backgrounds including academics and researchers, urban planners, city authorities and consultants. The countries represented a wide variety of geographical areas; different climates and rainfall patterns, different levels of socio-economic development (advanced and developing country) and different institutional conditions.

The SWITCH research project was born out of the recognition that in future, global change pressures will affect the ability of cities to manage urban water and therefore they need to be adequately prepared to deal with water management in a sustainable manner. This is because conventional urban water management is struggling to manage ever scarcer water resources to deliver water and sanitation services and dispose of waste water without adversely impacting the quality of life of urban populations and the downstream environment (Butterworth and Morris, 2005). The proposed direction for dealing with these complex issues to ensure sustainability was through the integration of various aspects of urban water management where interventions in one area take into consideration the effects on other areas. The SWITCH Project was different in that it focused not only on the technical aspects of water management, but also on the institutional aspects. The project assumed that many of the challenges faced in getting research into use, and replicated at scale, are not only technical, but also related to issues of governance, financing and institutions.

The SWITCH Project was designed to cover all the elements of the urban water cycle, from water demand management, to storm water management, waste prevention, treatment and reuse, governance and asset management, to river rehabilitation and ecohydrology. The key concepts on a new way for managing urban water which were built into the design were:

- Building of urban water systems that are resilient to global change pressures
- Having interventions over the entire water cycle
- Re-use of water/wastewater for agriculture and other livelihood opportunities
- Use of natural systems for wastewater treatment
- Exploring the use of decentralised wastewater systems.

Integrated urban water management was viewed as a precursor to sustainable urban water management, and cross-sectoral cooperation at national and regional levels was considered to be essential.

A key proposition was that sustainable urban water management is only possible if the entire urban water cycle is managed in a holistic manner, rather than on a piecemeal basis. One of the objectives of SWITCH was to develop research interventions that are more integrated, that research is put to use and sustained after the project and learning and sharing of lessons takes place so that innovations can be scaled up.

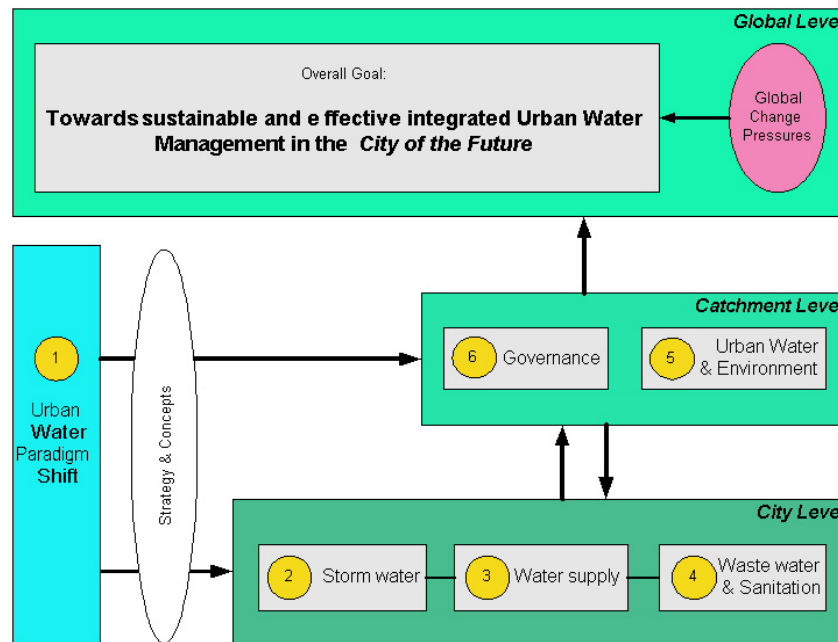


Figure 4-1: SWITCH Objectives (source: SWITCH Description of Works (DoW), 2006a)

The processes and concepts used by SWITCH are further outlined in this chapter, but first the SWITCH General Vision (from the project proposal) for Urban Water Management (UWM) is presented below:

- “UWM strategies need to be aimed at increasing overall sustainability, which means simultaneously satisfying social, environmental and economic boundary conditions.
- UWM strategies need to aim at increasing the sustainability of the overall urban water system (See Figure 4.1). Optimisation of the entire system will result in more sustainable systems than optimisation of separate elements (sub-systems).
- UWM has the highest chance of success, when based on a learning process in which all water sector institutions are taking part. The City Learning Alliance (LA) is a multi-stakeholder platform that is meant to steer the city towards sustainability. The steps undertaken in this process include
 - to agree on a vision for a sustainable urban water system,
 - to guide demand-led research to develop innovations that are required to achieve the vision, and
 - to upscale successful innovations to the city level.
- The vision for a sustainable urban water system needs to be described in terms of measurable indicators of sustainability. Monitoring (and publication) of the indicators can be used in evaluation of policies, planning and decision making.

- UWM is providing **services to citizens**; it needs to provide equity in terms of equal access to water, sanitation, irrigated green areas and other water related services for each citizen”.

(source: SWITCH DoW, 2006)

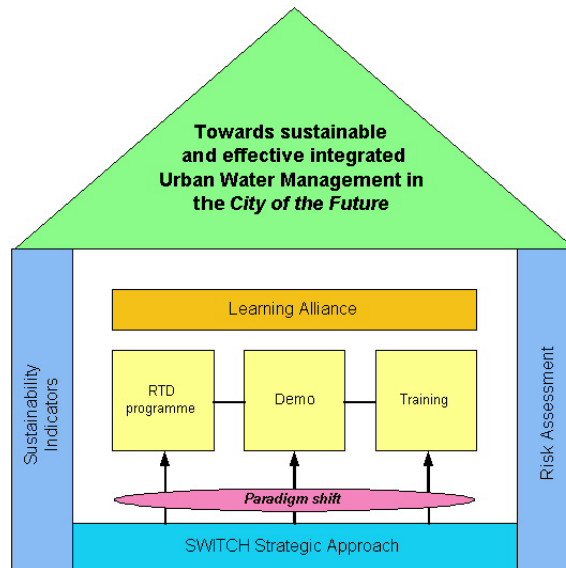


Figure 4-2: Schematic presentation of the SWITCH approach and methodology (source: SWITCH DoW, 2006a)

There were 6 thematic areas covering all aspects of the urban water cycle. These thematic areas were:

- Theme 1. Urban Water Paradigm Shift
- Theme 2. Storm water management
- Theme 3. Efficient water supply and water use for all
- Theme 4. Rational water use, sanitation and waste management
- Theme 5. Urban water environments and planning
- Theme 6. Governance and institutional change

A brief description of the Thematic areas and their respective sub-themes are provided in Appendix 8.

4.3 SWITCH Methodologies

A common shortcoming of conventional water management science is a focus on the interests of the researchers rather than the concerns of potential research users, who are rarely involved by research funders in prioritization, or by researchers in the design of the research. A further limitation is the tendency to shy away from integrated approaches, in favour of the division of problems into fragments and a single discipline approach (e.g. not

involving economists at an early stage to analyse the cost of technologies in relation to their use and not involving political scientists in the development of decision support processes). Moreover, research results published in scientific papers often do not reach the potential users of this information. SWITCH was designed to deal with these challenges through the following methodologies:

- **Action research –**

The project design included multi-stakeholder platforms known as city “learning alliances” through which SWITCH proposed to carry out demand-led, action-orientated research in cities with a view to achieving greater integration and wider impact. The objective was for SWITCH to address problems through innovation based upon involvement of users in local demonstrations (that are designed to show application of the new technologies in practical cases).

- **Multiple-way learning –**

As mentioned in section 4.2, the SWITCH consortium was made up of a broad spectrum of experts and resources from different settings; geographical, social and economic. It therefore provided an avenue for multiple-way learning and sharing between the consortium partners. This global learning platform was achieved through activities such as the City Water Summit, SWITCH Scientific meetings and Learning Alliance Sharing Workshops.

- **Learning Alliances**

The learning alliances in the different cities undertook visioning exercises to identify a vision of their city of the future. The LAs went further to develop scenarios and strategies that would support the achievement of the vision based on the research that was done in each city. Decision support tools were developed as part of the research process and used to support the development of the strategic directions. These tools were expected to consider critical uncertainties associated with the global change pressures in order to develop a resilient strategy.

Within the learning alliance itself, the following methodologies were identified by Moriarty *et al* (2005a) for the development of learning alliances and the SWITCH Project adopted these methodologies for the implementation of learning alliances.

Process monitoring and documentation provide a way to capture how change occurs in the learning alliance process; how and why it happens. It provides information for reflective analysis and planning of actions and strategies and also for dissemination. The city facilitators were trained on how to undertake process documentation and the various cities were required to undertake process documentation. This was mainly done through workshop reports and quarterly reports, but to allow for more reflective analysis, two City Assessments were undertaken across cities.

Dissemination and sharing is feeding back into the learning alliance as part of an action research cycle. This is important to keep the learning alliance members informed concerning activities that are on-going and to build continued interest in the process. Regular meetings in the cities ensured that this took place.

Process facilitation is made up of several functions; initiation of the learning alliance process, identifying and mobilising relevant stakeholders, providing methodological guidance and overview; weaving activities together in a flexible and context-specific manner to form a robust methodology, ensuring the participation and empowerment of all relevant stakeholders and conflict management. Within SWITCH Learning Alliances, the task of facilitation was the responsibility of one organisation and mainly the City facilitator. As intended by the project, city facilitators were trained in January 2007 on how to develop and build learning alliances. A further training was undertaken in May 2007 for facilitators who were not part of the initial training. The city coordinator was expected to provide another level of facilitation by coordinating the work of researchers in the city and the WP leaders.

These methodologies were part of an overall SWITCH strategic planning process which involved the following steps:

1. Visioning
2. Scenario Building
3. Strategy development

4.4 City Level Learning Alliances

Cities were the main focus of the process, and the SWITCH project adopted the learning alliance as a tool for innovation in water governance in these cities. The Learning Alliances

provided a framework for the researchers within the consortium to engage with city level stakeholders. The use of learning alliances can be traced to the agricultural sector (Smits *et al*, 2007). However, in recent times, learning alliances have been also been used in integrated water management projects. These include EMPOWERS¹⁰ in the Middle East (Moriarty *et al.*, 2007), a global project on rural water and productive use (Penning de Vries, 2007) and projects focusing on specific aspects of the urban water cycle (Smits *et al* 2009). The uniqueness of the SWITCH approach was in promoting the learning alliance approach in the urban water sector of large cities representing a wide range of cultural political and economic contexts across several countries (Sutherland *et al*, 2011).

The Learning Alliance was envisaged as a platform with the potential to provide a resilient framework for stakeholder engagement towards a paradigm shift to integrated urban water management. Rather than solely focusing on new research, the project had sought to encourage learning alliances to help set the research agenda and to put into use research across different aspects of the urban water cycle in cities to help improve integration and scaling-up. The General Vision for the SWITCH Project stated, “*UWM has the highest chance of success, when based on a learning process in which all water sector institutions are taking part. The City Learning Alliance (LA) is a multi-stakeholder platform that is meant to steer the city towards sustainability*”. The Learning Alliance was expected to:

- Break down barriers to horizontal (stakeholders responsible for the various components of the urban water system) and vertical (various levels of government) information sharing and learning; and
- Speed-up process identification, development, and up-take of solutions.

In order to implement the concept of the learning alliance, SWITCH during its inception proposed the formation and development of learning alliances in cities around the world: Accra (Ghana), Alexandria (Egypt), Beijing and Chongqing (China), Belo Horizonte (Brazil), Birmingham (UK), Hamburg (Germany), Lodz (Poland), Tel Aviv (Israel) and Zaragoza (Spain). During the project, the learning alliance cities were expanded to include Lima (Peru) and Cali (Colombia). To be effective and address the needs of the cities involved, SWITCH aimed to engage the relevant stakeholders and establish linkages

¹⁰ EMPOWERS (2003-2007) stands for Euro-Med Participatory Water Resources Scenarios which was an EU sponsored project that was aimed at improving local water governance in the Middle East. Participating countries were Egypt, Jordan, and Palestine. 15 partners worked together to improve access to water by local communities. Source: <http://www.project.empowers.info/page/107>

between research providers, knowledge managers and research users through learning alliances.

Within the overall SWITCH process, learning alliances were expected to contribute to the development of city strategic plans for IUWM which would be owned by all stakeholders in the city through the following steps: visioning, scenario building, and strategy development. The city-level learning alliances were made up of the project researchers and city-level stakeholders with a facilitating team made up of a coordinator and a facilitator.

Within the SWITCH project, it was conceptualised that the City Learning Alliances would adopt the methodologies described in section 4.3 above for the development of their city strategic plans for Integrated Urban water management. It was envisioned that LAs would go through the following steps:

- agree on a vision for a sustainable urban water system,
- guide demand-led research to develop innovations that are required to achieve the vision, and
- upscale successful innovations to the city level.

Research is supposed to play a key role in the learning alliance process by providing a strong scientific basis for the development of strategies for the achievement of integrated urban water management in the cities. In principle, the learning alliance was expected to contribute to demand-led research within the overall SWITCH project, however, most of the research areas were defined before most learning alliances started. This was done as part of the development of the project proposal and description of works. The consortium itself was formed to a large extent from existing research networks and partnerships with each partner engaging in a workpackage based on their prior research in that research area. The next two sections describe the two cities that used the learning alliance process in SWITCH. They are described in terms of Start-Up, Growth and Development and Communication and Sharing.

In the analysis chapters, the key outcomes during these phases will be discussed in detail.

One of the objectives of the SWITCH process which had an influence on the learning alliance and research demonstrations was the workpackage on social inclusion which explored the inclusion of marginalised persons in the research experiments. The

participation of farmers (urban Accra demonstration in Accra) and community members (in Belo Horizonte and Alexandria) are examples of demand led and poor-user led research approach. In section 2.3.5 reference is made to six innovation approaches identified by Hall et al, 2010. In this study, I will make reference mainly to three of these approaches to innovation. The user-led research approach highlights the role of stakeholders in the process of jointly undertaking visioning, scenario building, action research and demonstrations. In addition, communication led approaches and capacity development led approaches are discussed. These are presented in table 4.1 below.

Table 4-1 Comparison of Innovation approaches to learning alliance process in SWITCH

Innovation approach	Link to SWITCH Action Research and Learning Alliance Process
Capacity Development Led approach	This is linked to the use of learning alliance to serve as a platform for learning, training programmes, learning and sharing meetings, training tools developed by ICLEI, city water tool and other decision support systems, manuals developed by project. E.g. transitioning manual, (city water and training of stakeholder’s in Birmingham for its use)
Communication Led approach	The use of city websites; and meetings as sharing spaces, process documentation, communication among members, city water summit, scientific meeting and global learning alliance sharing meetings were used to promote the adaptation of technologies developed by SWITCH researchers.
User-led approach	Engagement of stakeholders in Visioning and scenario planning process, Action research and demonstrations. Dimensions of social inclusion and objective for the inclusion of marginalised persons in decision making within the learning alliance process. This was evident by engaging with users of research to shape the direction of demonstrations (e.g. urban agriculture demo in Accra, poor communities were also engaged in Belo Horizonte, Alexandria and Lima)

Source: author’s own Based on Hall et al, 2010.

4.4.1 SWITCH Learning Alliance Process in Accra

In response to the ideas proposed by the SWITCH project, a learning alliance was formed in the city of Accra. The following methodologies were employed in the setting up of the LA in Accra:

- Initial scoping to identify stakeholders
- Stakeholder analysis
- Institutional mapping

As an initial step towards the development of the learning alliance, a scoping exercise was undertaken to identify the key players in the urban water sector in Accra who could be engaged in a multi-stakeholder collaboration. The objective of the scoping exercise was to inform partnership development and detailed planning of the SWITCH project during the inception phase. It was a rapid exercise intended to provide key, but provisional knowledge on each city prior to the start-up workshop. The exercise was done through a literature review, internet search and short pre-arranged consultations and discussions with recognized stakeholders and was undertaken by the SWITCH collaborating partners¹¹ in Accra, with support from two members from the SWITCH Management Team; the project manager and researchers from SWITCH partner institutions. The exercise identified the mandates and responsibilities of the relevant stakeholders, challenges in urban water supply in Accra and possible actions that the SWITCH project could follow up through research and the LA process. The exercise also identified contacts within the institutions who could act as the point of entry for the LA. The following were identified as areas within which the SWITCH project could make interventions in Accra:

- Pollution of water bodies due to inadequate treatment and poor sanitation
- Lack of access and inequitable access to safe water and sanitation especially in poor areas
- Flooding due to poor drainage, silted channels and blockage because of solid waste
- Polluted wastewater use in agriculture
- Inadequate land use planning and control in urban water management and limited inclusion of marginal stakeholders in the planning process

¹¹Within the SWITCH consortium, KNUST and IWMI were the local collaborating partners in Accra

The following stakeholders were initially identified as having the potential to contribute to the development of the LA in Accra. They are categorised in the stakeholder groups defined by the SWITCH project.

Table 4-2: Stakeholders identified during initial scoping in Accra¹²

Stakeholder Category	Stakeholders
Government Ministries, Departments and Agencies	Water Directorate and Hydrological Services Department (HSD) of the Ministry of Water Resources, Works and Housing (MWRWH ¹³), Accra Metropolitan Assembly (AMA- Waste Management Department (WMD), Public Health Department (PHD), Planning and Coordination Unit (PCU) AMA-PHD, AMA-PCU), Ghana Irrigation Devolvement Authority (GIDA)
Research and Training Institutions	IMWI, KNUST, CSIR-WRI, -STEPRI, Centre for African Wetlands, University of Ghana (CAW-UoG)
Regulators	Water Resources Commission (WRC), Public Utilities Regulatory Commission (PURC), Environmental Protection Agency (EPA)
Service Providers	Ghana Water Company Limited (GWCL)
Local Associations and Advocacy Groups	Coalition of NGOs in Water and Sanitation (CONIWAS), Integrated Social Development Centre (Isodec)
NGOs	Trend, WaterAid
Media	
Donors/Development Partners	European Union (EU), Danida, WorldBank, German Technical Cooperation Organisation (GTZ), Canadian International Development Agency (CIDA ¹⁴) etc.

A city coordinator was appointed to be responsible for the coordination of activities between the research partners in Accra. To facilitate the process, a facilitator was recruited in January 2007. To support the work of the facilitator, there was training programme in the development and facilitation of learning alliances. The learning alliance was formally

¹² Following the establishment of the LA and further stakeholder consultations other stakeholders were identified and added

¹³ Following a change of government, a new Ministry of Sanitation and Water Resources (MSWR) was created in 2017

¹⁴ CIDA became known as Department of Foreign Affairs, Trade and Development, or DFATD in 2013

launched in March 2007 following further stakeholder consultation by the learning alliance country team. At the launching were key stakeholders such as government representatives and the then Mayor of the city of Accra. During the workshop, stakeholders in Accra started the strategic planning process by first defining a vision for the city. The stakeholders also categorised what they envisaged as being the problems in urban water management in Accra and the areas which they expected SWITCH research to address.

Following the establishment of the LA platform and building on the initial scoping exercise, a full stakeholder analysis was undertaken by the City facilitator (who is also the researcher of this study). The full stakeholder analysis went further to identify the interests of stakeholders, their influence levels and specific barriers and drivers that could affect their involvement in the LA process and the adoption of innovations.

A Visioning and Scenario building exercise was undertaken in August 2007 to further refine the vision which was developed during the first learning alliance workshop. This workshop also marked the first step in strategy development. For the various elements of the vision and the scenarios which were envisaged, initial strategies and activities that could lead to the achievement of the vision were listed.

To fill in the gaps identified during the initial scoping exercise and to provide direction for the development of strategies, research was undertaken in the following areas:

- Use of urban water (fresh and waste water) for urban agriculture and other livelihood opportunities
- Maximizing the use of natural systems in all aspects of the municipal water cycle
- Governance for integrated urban water management

It was expected that the results of the research would provide a basis or the development of strategic directions for Integrated Urban Water Management in the city.

The research work was defined under work packages (W.P.) in the SWITCH project and was carried out by various researchers from the partner institutions participating in the project (refer to Appendix 7 for list of SWITCH Project Partner Institutions). For example, the use of urban water for agriculture and other livelihood opportunities came under WP 5. 2 and maximising use of Natural Systems was put under WP 5.3. Each partner institution had a number of work packages assigned to them, on which researchers in the institution

carried out research. Learning alliance members were involved in the research activities mainly by providing information for the researchers and giving feedback on the results presented by researchers at learning alliance meetings.

In addition to the learning alliance meetings and arranged stakeholder consultations, learning alliance members participated in training exercises organised under the workpackages. The objective of these training sessions was to involve the LA members in selecting the demo sites and the type of demonstrations to undertake, based on the results from the research work. Two demonstration activities were identified in the city; both linked to urban agriculture. The first was in the treatment of wastewater for use by farmers and the second was the use of urine as fertilizer in urban agriculture.

A third step in the strategic planning process for the SWITCH project was Strategy Development, for which two key exercises were undertaken. The first was an Institutional Mapping exercise. This exercise was in furtherance of the earlier work done; the initial scoping exercise and full stakeholder analysis. The objective was to provide more information on the institutional framework for integrated urban water management. The second exercise was the **Resource Infrastructure Demand Access (RIDA)** analysis. This exercise gave a detailed overview of the existing situation in Accra with respect to Urban Water Management. The RIDA is a framework with four headings (which form the acronym) which provide a set of questions that are used to assess availability of water resources and infrastructure for supply and how this matches with demand from the population, as well as the proportion of the population with access to services. This framework was used as the basis for strategic planning work in Accra. Further details of the RIDA framework and how it was used are provided in section 6.6.3 and Appendix 4.

4.4.2 SWITCH Learning Alliance Process in Birmingham ¹⁵

Similar to Accra, a Learning Alliance was set up in Birmingham as part of the SWITCH project. The Birmingham learning alliance started in 2006 with researchers and consultants. Unlike Accra, where the facilitation team was from Academia/Research and Training Institutions (RTI), the facilitation team in Birmingham was from a consultancy company that worked in the city. In the beginning, the coordinator acted as the facilitator until December 2007, when a facilitator was brought on board. The learning alliance

¹⁵Information for this section is synthesised from interviews with the learning alliance coordinator and facilitator as well as secondary information from learning alliance reports.

process followed similar steps to those identified in Accra. There were visioning and scenario building workshops which were supported by an initial scoping exercise, a full stakeholder analysis and an institutional mapping exercise.

The stakeholders in Birmingham were made up of members from within the city and the surrounding conurbation. The process initially engaged the stakeholders who had been working with the researchers on other projects that required the coordination of various stakeholders, prior to the establishment of the Birmingham LA. Researchers in Birmingham used these contacts to bring the different stakeholders together, sending out initial invitations for the stakeholders to join the learning alliance. Over time, more actors were identified and involved. These are shown in Table 4.3:

Table 4-3 Stakeholder Groups in the Birmingham Learning Alliance

Stakeholder Category	Stakeholders in Birmingham
Government Ministries, Departments and Agencies	Birmingham City Council, Advantage West Midlands, Department for Environment Food & Rural Affairs (DEFRA)
Research and Training Institutions	University of Birmingham, Middlesex University, University of Abertay, Dundee
Regulators	Ofwat, Environment Agency (EA)
Service Providers	Severn Trent Water
Local Associations and Advocacy Groups	Consumer Council on Water (CCW)
NGOs	-
Media	-
Donors/Development Partners	-

The visioning exercise combined a number of tools and methods; a questionnaire, telephone interviews and two workshop settings. The coordinator and facilitator sent out a questionnaire based on existing visioning documents such as DEFRA’s Future Water for England, Severn Trent’s Strategic Direction Statement and Birmingham’s City Vision. This allowed stakeholders to prioritise the action points for the vision. Two visioning workshops were held in October 2007 and March 2008. The vision was based on a synthesis of existing visioning documents; the unique aspect of the process was to have three groups to discuss scenarios under what was known as the ‘old world view’, the ‘new

world view' and the 'sustainable world view'. The result of these exercises was what is known as "Vision of Birmingham in 2050", which is "Birmingham is a green, clean and vibrant, multi-cultural city: among the world leaders in terms of water resources, sustainability, environment, economy and development and seen as an exemplar of Sustainable Integrated Urban Water Management".

Research within Birmingham was placed centrally within the Learning Alliance Activities and the researchers regularly shared their results with the general learning alliance members during meetings. Demonstrations were undertaken on green/brown roofs. According to Bates *et al* (2006) green roofs is a broad term for roofs of buildings that have plants growing on them. They describe two types of green roofs; intensive green roofs which have landscape gardens and extensive green roofs which have a shallow substrate layer and can be easily installed on a wide range of roofs. Within the SWITCH project, experimentation was mainly done on the second type, i.e. extensive green roofs¹⁶

One exercise that was driven by the learning alliance was the involvement in the assessment of an area known as the Eastside of the City of Birmingham. This was a Scoping report¹⁷ for Critical Infrastructure for a regeneration project, produced at the request of learning alliance members (Birmingham City Corporation, Eastside Development Group and Advantage West Midlands). It represented a joint action by these members of the learning alliance as well as partners of the SWITCH consortium in the city; the University of Birmingham, University of Middlesex and University of Abertay-Dundee. The report was well received by the LA members. A stakeholder analysis for the LA was completed in June 2008. Although this stakeholder analysis was completed later than intended, the initiation of the learning alliance progressed smoothly given that the LA was formed around a theme of interest to the stakeholders in Birmingham and also based on the fact that the LA facilitator had a good knowledge of the stakeholders and their roles, based on experience of working in Birmingham for a long time.

¹⁶ These roofs are characterised by thin growth substrates, low maintenance and lower costs compared with traditional green roofs. Specific interest has been on brown roofs, a type of extensive green roof that is designed to mimic brownfield sites at an early stage of succession. The roof design influences the environmental benefits and designing a roof to maximise one environmental benefit can potentially trade off against other environmental benefits (runoff reduction, thermal insulation, thermal cooling, biodiversity and roof longevity among others)'. <http://switchurbanwater.lboro.ac.uk/demos/1.php>

¹⁷"Scoping Report for Critical Infrastructure for Eastside Regeneration Area"

Communication with the learning alliance members was mainly through email and sometimes by phone. This was useful, especially for members who were not necessarily based in Birmingham. To support communication with stakeholders, the Birmingham LA team developed a city website in December 2007. The website provided information on LA members, the activities and demonstrations that were on-going in the city. The LA team saw it as a useful tool for the dissemination of research information and researchers in the city had access to the site to upload results and details of their research and demonstrations. Based on the needs of LA members, two training workshops were organised on SUDS/BMPs and Green roofs. Learning alliance members also had the opportunity to visit the sites for the green roofs demonstration.

4.5 Linkage between learning alliance and conceptual framework and Role of Researcher within SWITCH Project

The idea of research themes and workpackages as well as learning alliances, was conceived as part of the development of the SWITCH Project. The learning alliances were part of action research under SWITCH Theme 6 (Workpackage 6.2). The learning alliance therefore was a subset of the main SWITCH Project. However, it was also a cross-cutting activity because it served as a platform for bringing together researchers and city stakeholders (users of research). The main players within the SWITCH Project as explained earlier, were the (1) project management level, (2) the researchers and (3) city level stakeholders. The learning alliances were based in the cities and managed by coordinators and facilitators.

The role of the researcher was to work as the learning alliance facilitator in the city of Accra. This role comprised the setting up of the learning alliance in Accra, engaging with stakeholders through meetings, consultations and visits. As part of the work as a facilitator, the researcher was responsible for data collection and documentation of activities of the learning alliance. The researcher was also responsible for conducting a stakeholder analysis exercise, followed by an Institutional mapping exercise. In addition to the role of learning alliance facilitator in Accra, the researcher conducted two city assessment exercises with the learning alliance team in Birmingham. The researcher worked in collaboration with the city based SWITCH researchers in Accra and the learning alliance played a role in selecting demonstration sites. The work was also related to the

dissemination of the research that was being conducted by the researchers in their respective workpackages.

A conceptual framework for analysing the contribution of learning alliances to governance, innovation and learning in urban water management was developed by the researcher specifically for this thesis. Data collected by the researcher as part of the project activities was analysed using this framework and sub-frames, for example, the researcher’s analysis of the contribution of learning tools (even though the individual tools – meetings, RIDA, demonstrations- and processes were collaboratively used as part of the learning alliance activities).

Table 4-4 Timeline of project and contribution to research

Date	Major Milestone	Some activities undertaken by researcher
2006	Project Commences LA in Birmingham set up	
2007	LA in Accra set up	(researcher played a key role in convening stakeholders and setting up LA Conducting stakeholder holder analysis; Proposal for PhD
2008	LA city assessment	Registration and formal start of Phd (researcher conducted stakeholder assessment in Accra and Birmingham Institutional mapping
2009	LA activities and meetings	Researcher engages stakeholders, documentation of activities, RIDA work
2010	2nd LA City Assessment	End of Project Stakeholder interviews
2011	Project completion	Stakeholder interviews continued

(a detailed timeline is provided in appendix 3e)

4.6 Conclusion

This chapter has given a description of the conceptualisation and design of the learning alliance approach at the onset of the SWITCH project and the formation and operation of city learning alliances in two cities; Accra and Birmingham. In the next chapters, we will look at the outcomes of these in the context of learning and innovation as well as decision making and governance relating to urban water management. We will explore these through the view of the various actors within the project and also through various activities that occurred throughout the project.

The next three chapters present the data collected from the cities and the analysis of data. It starts with a presentation of the situation in the cities in terms of urban water management and gives an overview of the city level players involved in water management. These sections (5.2 and 5.3) build further on information provided in sections 4.4.1 and 4.4.2 and tables 4.2 and 4.3, to describe the setting for the learning alliance in the cities. The narrative moves from the setting to discuss the activities and outcomes of the learning alliance in the next chapters. This follows the defining characteristics of the learning alliance discussed under the conceptual framework presented in section 2.3.8 (sub-frame 1). The Atmosphere (or context), the Actors, the Action and the Outcomes. The first of the three chapters focuses on the atmosphere and actors, the following two focus on the actions (both of actors and the learning platform) and the outcomes of the learning alliance activities. The presentation of the next chapters is arranged to follow the process of learning alliance development described in sections 2.3.2, 2.3.8 (conceptual framework sub-frame 1) and 4.4. vis: start-up stage (early engagement), the growth and development stage (engagement process) and the sharing stage (early outcomes). These also fit within the temporal progress of the life cycle of an LA (presented in table 2.2) and is presented in this manner in figure 4.3 below.

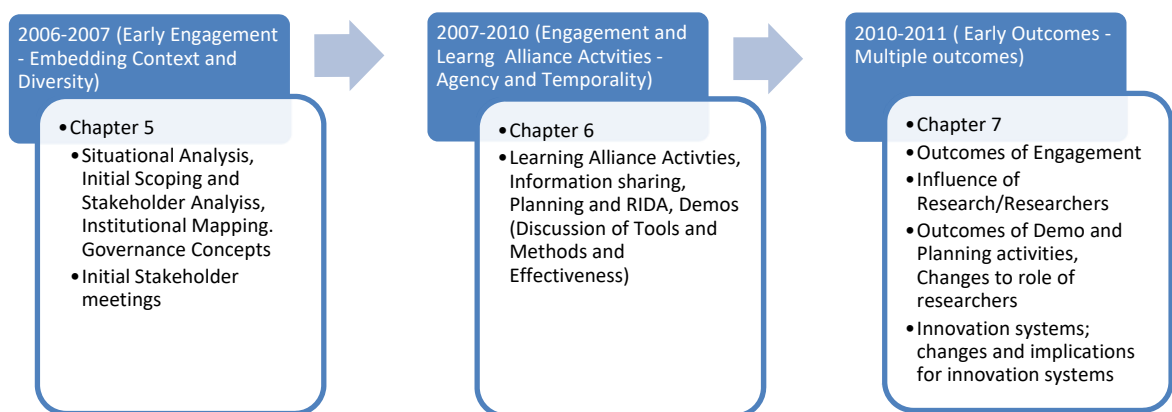


Figure 4-3 Timelines for progress of learning alliance (source: author's own)

5 How learning alliances were started: an institutional context

5.1 Introduction

One of the areas of exploration of this study is the ability of the learning alliance to bring about institutional change and innovation. An understanding of the institutional set up at project inception in relation to innovation is needed in order to appreciate the changes and innovations the city learning alliance might have influenced. This chapter provides further details about the results of the situational analysis and institutional mapping in Accra and Birmingham and explains how they influenced the initiation of the city level learning alliances. In terms of the timeline of the learning alliance process, the start-up and early engagement process of the learning alliance from 2006 to 2007 is reviewed. This chapter addresses research sub-question one.

Sub Question 1: How can the learning and innovation processes of city learning alliances centred on Integrated Urban Water Management and Governance be described and analysed?

This question will be addressed by providing insight on what a learning alliance is in practice, with information on who the members of the learning alliance are, how a learning alliance gets started and the activities and mechanisms of a learning alliance. In addition, the inputs and conditions needed to sustain a multi-stakeholder process relating to IUWM will be assessed.

This chapter explores the situation leading to the establishment of city level learning alliances. It provides an insight into how the start-up of the city learning alliances were shaped by the historical and institutional context in both Accra and Birmingham. With respect to the conceptual framework (section 2.3.8), information is provided on the central concept of learning alliances (subframe 1) and on how learning alliances work in practice. The chapter will describe the atmosphere (context) and actors in the learning alliance and presents information on the context, diversity (how stakeholders are selected) and process of embedding the learning alliance within the existing institutional set up of the respective cities (see sub-frame 1). It also provides information on interactions and activities that take place within the learning alliance (subframe 2 of conceptual framework).

The main historical context that influenced the composition of the learning alliances were the different challenges with urban water management in the cities (described in chapter

4) and the stakeholders who had a mandate to deal with those challenges. At the beginning of the LA process an initial scoping study was done to assess the interests of the stakeholders. A stakeholder analysis and institutional mapping were undertaken by the researcher in her capacity as the city facilitator to support the process of engaging the requisite stakeholders for the learning alliance. The next two sections make use of information collected by the researcher as part of the institutional mapping in the learning alliance process and further explain how it will be used to answer the research questions related to the different stakeholder groups that were involved in the learning alliance process. The sub-frame used in this section was developed as part of this research and the analysis provided is based on the conceptual framework for this research.

Section 5.3 focuses on Accra and discusses policies and institutions that support the different aspects of urban water management. The broader set up of the water sector and how the city fits within this setup is presented. The discussion on agencies responsible for urban water management in Accra will be essentially limited to city level stakeholders responsible for water resources, water supply, wastewater management, stormwater management and urban agriculture, national level players responsible for policy and regulation.

Section 5.4 focuses on Birmingham and discusses the institutional set up in relation to the research activities that were undertaken in Birmingham. The stakeholders discussed in detail are mainly city level stakeholders involved in planning, water supply and storm water management.

First, this thesis explores the structure which is represented by stakeholder groups and organisations and then the relevant relationships and rules governing the behaviour of the stakeholders are discussed.

- Who are the individuals and institutions (stakeholders) involved in the process?
- How were they identified and how were their interests in integrated urban water management defined and how were they brought to the platform?

It will also provide information for subsequent discussions about changes in stakeholders, and the mechanisms used for engagement which could help to answer other questions such as:

- What attitude did these stakeholders have (what did we seek to change)?
- How did they see their roles in the LA and how did they influence the direction of the LA?
- What are the relationships between these actors and how did that impact on the goals of the LA.

The Chapter concludes by reflecting on the gaps within the existing institutional setup and how the learning alliance addresses these gaps.

5.2 Institutional and Historical context that influenced the learning alliance in Accra

5.2.1 Actors in the Formal Institutional Framework of Accra

This section presents a functional analysis of the formal institutional set up of urban water management in Accra, including policies and strategies relevant to integrated urban water management. It also describes the informal institutional set-up relating to urban water management in Accra. According to Green (2007b), the analysis of institutional arrangements needs to consider each different level or layer of governance. To some extent, the institutional arrangement for Accra is an extension of that for water management in Ghana because the city layer is nested within other layers. The formal institutional framework will therefore consider the role of the Ministries in urban water management in relation to the city authorities. The key players were considered under the following functional categories in the socio-political/institutional set up of Accra:

- policy-making, planning
- financing,
- Legislation
- Regulation
- Service provision

The following table gives an overview of the organisations involved in urban water management in Accra.

Table 5-1 Actors in Accra and their role in the formal institutional setup

Stakeholder group	Subsector		
	Water Resources and Supply	Wastewater (and Solid waste) management	Storm water management & Drainage
Policy making, planning and financing	National Development Planning Commission (NDPC) Ministry of Finance and Economic Planning (MoFEP) ¹⁸		
	Ministry of Water Resources, Works and Housing (MWRWH)	Ministry of Road Transport ¹⁹ MLGRD	MWRWH
Legislation	Parliamentary select committee on Water resources	Parliamentary Select Committee on Local government, MMDAs	Parliament select committees on Water, Roads, MMDAs
Regulation	WRC PURC	EPA	
Service Provision	GWCL/AVRL Alternative water service providers	WMD-AMA Environmental Service Providers	Hydrological Services Department, Department of Urban Roads MMDA (drainage maintenance unit)
Consumers and civil society groups	Citizens of the Greater Accra Metropolitan Area, NGOs, CBOs		
Allied Ministries (policy makers)	Ministry of Food and Agriculture, Ministry of Health, Ministry of Environment, Science and Technology		

Discussions in this chapter will focus on the existing role of these stakeholders with regard to innovation in urban water management.

¹⁸ Now Ministry of Finance (MoF)

¹⁹ MRT now Ministry of Roads and Highways

Ghana's commitments to international goals have impacted significantly on the direction of the general water sector including urban water management. In the 1990s, commitments to principles of IWRM led to the establishment of the Water Resources Commission. Global commitments to issues such as agenda 21 and principles of good governance have led to the increased acceptance of civil society participation at the National level.

In accordance with principles of good governance promoted by donors and as a result of international commitments, water sector reforms began in the country in the early 1990s. The reforms were aimed at improving quality of service while at the same time improving on the operational efficiency of the Ghana Water Company Limited to make it more "profitable" thereby bringing in the needed investment for expansion. There was (and still is) a general notion that expanding facilities will bring improvement in water supply. Generally, while this is true to some extent, a closer analysis of the system as done by SWITCH shows that investing in a system that has about 50% losses is not sustainable. One of the goals was then to work with stakeholders to see a clearer picture of what actually happens in the sector; to have a deeper understanding of the issues rather than assume that expansion of production facilities translates into more water. Demand management was therefore one of the research activities undertaken by the SWITCH project in Accra. The points raised above refer to some dimensions of good governance – accountability, equity, efficiency, sustainability. The principles of good governance are clearly stated in the Ghana Water Policy as one of the underlying principles. Ghana has legislation which is committed to upholding the principles of democratic governance since the country returned to constitutional rule in 1992. The parliament of Ghana plays a key role in the ratification of policies. The Ghana Water Policy was finally ratified by parliament in 2008. Similarly, the National Sanitation policy was ratified in 2010. Looking at the time gap between the inception of reforms and the formal ratification of policies in Water and Sanitation shows how long it can take to establish formal institutions; during that time there was a lot of consensus building and reliance on the old systems as well as an informal system to bring the sector to the point where policies could be consolidated. This point reinforces the role and influence of the informal rules/institutions.

5.2.2 Issues with the Formal Institutional Setup in Accra

It is quite challenging to delineate an institutional framework for urban water management in Accra at the metropolitan (city) level. This is because not all water management functions rest with the Accra Metropolitan Assembly (AMA), the city authority. The fact

that Accra is the National Capital of Ghana also brings in the National level institutions automatically. It is therefore a challenge to use the city as the base for integrated planning and innovation in water management without bringing in the other line ministries. Secondly, urban water management functions do not reside with just one institution or ministry. It is the case that even within cities and municipalities their statutory planning committees are made up of representatives from these National agencies.

An analysis of the formal institutional setting indicates that there exist building blocks in terms of policies and organisations. There are however some challenges that are noted with the implementation of policies and strategies. The policies and mandates of key organisations do not explicitly talk about integrated urban water management (IUWM), however, there are some statements in the policy on integrated water management (IWRM) which provide a point of entry for a process towards integrated urban water management. Gaps and challenges which can impede the shift towards integrated urban water management, include unclear delineation of responsibility for providing the poor with water. Even though the water company is responsible for supplying water, the regulator is tasked with developing pro-poor approaches while the poor located in peri-urban areas do not have a particular agency that is responsible for ensuring that they have access to water. Despite these gaps, the fact that the institutional set up is still evolving and reforming provides space for including innovations in urban water management. There are also challenges of fragmentation and inadequate coordination among these agencies. Even though the water policy recognises collaboration among stakeholders as being important, there is a lack of clear integration strategies within policies and institutional mandates. Another challenge noted is lack of capacity (human resources and budget) which has limited the ability of sector agencies to implement fully their respective mandates.

The challenge with implementation is twofold; sometimes the lack of human resources and sometimes the lack of budgets. For example, for a long time, the key staff of the water directorate of the Ministry of Water Resources were paid through donor supported projects. When these projects ended, some of the key staff left. These key staff are currently supported by the GWCL and are yet to be fully integrated into the Ministry system. The inability for the water directorate to be fully integrated into the existing Ministry is reflective of a project that was not demand-led but encouraged by the donors and in the end, it still remains a donor driven initiative to get the water directorate integrated, despite the different ministers who have come and gone.

In terms of urban water management, City Authorities do not have direct control of water resources management and water supply even though they are expected to play critical roles in these aspects. The aspect of water management of which the city (Metropolitan Assembly) is supposed to have total control is waste water management and to some extent, storm water management. The Metropolitan Assembly has departments that have some level of responsibility for stormwater management and agriculture.

Accra, as mentioned, is a treble capital; National, Regional and District Capital. The result is that key policy makers, governance players and government ministries are also situated within the city. This fact limits the power of the city authorities to some extent; even though according to the local government Act 462 of 1992, cities are supposed to have authority over their planning etc. They still have to rely on certain centralised agencies/ and ministries for infrastructure, roads, electricity, water, health education etc. The presence of line ministries has prevented a complete decentralisation and there is a requirement for the line ministries to have departments under the city authorities. These line ministries and their agencies are not accountable to the cities and sometimes the city authorities have to negotiate to be made part of the plans of these agencies for the particular year in consideration. An example of an agency that is not directly under the city authorities in Accra is the water supply company (GWCL). An interview with an LA member from the Accra Metropolitan Assembly indicates the following:

“Q: what is the responsibility of AMA regarding water?”

Stakeholder (planning officer) To make sure the citizens get the best services

Q: what mandate do you have to make this happen?”

Stakeholder (planning officer) “We don’t dictate to GWCL. We expect them to give us information to ensure that it [provision of services] is done. GWCL decides what they want to give us. Because the collaboration is not there, we don’t know what they are doing. Sanitation is the responsibility of the assembly so it is a bit easier for us to plan for that one”

The statement above is suggestive of the fact that the GWCL is a very powerful player and is not directly accountable to the City Authority. In practice, the GWCL answers more directly to the Minister of Water Resources. Another factor that suggests the GWCL is a powerful player are statements that indicate that when certain functions were transferred to the assembly, the staff remained mainly at GWCL. Water is a political tool and a lot of complaints are made about water; this sometimes forces political parties to make

campaigns about water supply. When there are challenges with water in the city, consumers will call the water company to account, they do not make reference to the city authorities. On the other hand, when there is a problem with sanitation, the citizens rightly make reference to the city authorities. The statement from the stakeholder indicates also the strong role played by the City Authorities in planning for sanitation.

The SWITCH project was intended to be based on a local institutional boundary which is the city. However, considering the institutional set-up described above, a number of challenges are noted:

1. The mandate of the city authority. The fact that based on the governance system for water, the city although mandated by the Act 462 to provide basic amenities for its citizens is not directly responsible for supplying water to its citizens. This responsibility rests with the parastatal GWCL (Act 461) which recently became privatized. Other functions for IUWM are spread between the city and other state institutions and ministries and this makes it difficult to get the city as the clear owner or driver for IUWM.
2. The fact that IUWM goes beyond the city itself to other cities or municipalities which share a common boundary and whose activities have a direct effect on IUWM in the city. It should be noted that the administrative boundaries are different from Urban Water Management boundaries. Referring to (Berry 1994), Cleaver and Hanks (2005) state that “Neither communities nor resources consistently exist with clear boundaries”
3. Decisions regarding water sector and water resources management are made at a different level from the city; for example, the water policy and sanitation policies, which deal with various aspects of IUWM, are made at the national level sometimes with the cities having only a peripheral level of participation. The city is mostly responsible for implementing the part of the strategies that are required under their mandate. To influence National Policy directions towards IUWM, there was a need to engage national level stakeholders such as the ministries with responsibilities for water and sanitation.
4. The role of informal players in the water sector in water supply and sanitation (further discussed in section 5.3.3)
5. The role of donors and development partners in shaping the direction of the water and sanitation sector and by extension, water and sanitation in the city.

The points summed up above show that when it comes to Integrated Urban Water Management, the policies do not identify a clear owner or lead. Given that the city remains a clear player in other aspects of planning, waste water management, storm water management and public health it is a potentially influential stakeholder when it comes to implementation of integrated urban water management policies. While proposing the city to take ownership of IUWM is a potential step in the right direction, the fact that IUWM boundaries fall outside of the city poses another challenge in a system where there is limited coordination among stakeholders. This implies the need for a space that would promote coordination among stakeholders. This space falls within the intermediary domain when considered from an innovation systems perspective (chapter 2 section 2.3.3.1)

The reality of decision-making in urban water management is that it occurs at different levels; international, national, regional and local levels (Green, 2007, Cleaver, 2005). Although the focus of this SWITCH project was at the city level, the assessment of institutions shows that decision making at the city level is affected and influenced to a large extent by decisions made at the regional and national level and beyond (vertical level) and also across cities (horizontal level relative to the city). The donor community also play a key role in the decision making and projects that are implemented at the national and city level. This means that the involvement of the donor group in the learning alliance process was very important.

5.2.3 Informal Institutional Setup for Accra

The role of informal institutions in policy-making, planning, financing, legislation and regulation is very limited and those functions remain largely the duty of the formal institutional set up. The informal institutions are based on gaps in the formal structure. The role of the informal sector is however very significant in the area of service provision for water supply and waste water disposal services. As previously noted, the important role played by the informal sector is because almost 50% of residents are not connected to the 'formal' water supply system. Secondly, due to the inadequacy of the waste water management system, only 15% of residents are connected to a sewer or waste water system and most residents have to rely on small enterprises for services or have their own on-site waste water treatment system (e.g. septic tanks, latrines). Most residents also rely on public toilets provided either by the assembly or by small scale private business people. Others (about 20%) rely on open defecation.

Unlike the formal setup, the rules for the informal setup are not clearly defined. In terms of services, the informal sector is mainly made up of private service providers who operate at a small-scale level. For water supply, these are private providers of water, such as tanker owners and water vendors. For waste water management, they are mainly owners of private cesspit emptying small enterprises. Most of these do not have any formal contract with the local authority, but are called on by the residents/citizens whenever their services are needed. The prices of these providers are not formally regulated but determined to a large extent by existing market forces. Their prices are based on the charges of the utility provider plus a profit margin which is determined by demand and other factors such as cost of transportation. These players do not play a part in determining the tariff for water or sanitation. For water, it is done by the regulator. For sanitation in the informal sector, prices are determined by market forces (also influenced largely by the cost of transportation and the cost of disposal at a waste disposal site). For urban agriculture, the informal sector stakeholders are mainly farmers. The informal sector has their own associations to deal with their issues since they are more recognised by the formal sector only when they form associations. As a result, there is limited regulation of the informal service delivery for water and sanitation services. In terms of innovation systems, the informal sector will fall into the enterprise domain (see section 2.3.3.1).

When it comes to including civil society groups, citizenry groups or informal groups in activities such as the learning alliance, there is a gap in identifying which group of actors best represent the public good. There are no clear criteria for identifying public interests even though access to water by the poor is one of the issues that is often highlighted at sector meetings and is within the water policy. The direct linkage between the formal service providers and the public is not strong. The PURC is expected to protect the public and social interest. They are responsible for taking up public complaints and for informing the general public in relation to water services. As part of the commission there is supposed to be a representative of the consumer or works through the Trades Union Congress (TUC) and the Consumer Association of Ghana. The desire for transparency however, requires more work as the public appear not to be well informed in some cases.

There is no clear or formalised role for the media in urban water management, but they serve as a source of information for the general public who rely on them a lot for information. The media in turn get information for the general public through the public relations units of the sector organisations. All the public-sector organisations have public

relations (PR) outfits responsible for communicating with the general public. The researcher's visits to media houses at the beginning of the project in 2008, found that most of them did not have an environmental desk or dedicated journalist for environmental affairs, except for a few journalists mainly in the state-owned media in Ghana. The role of radio stations within the electioneering programme of Ghana with regular morning shows where callers can call in and mention their problems, shows that the role of the media should not be down played. However, there is no strong engagement with the media except when there are public interest issues such as water shortages, flooding and stories about waste water being dumped in the environment and the media contact the water companies for information. The role of the media relating to water and sanitation is more ad-hoc/post hoc or becomes heightened when there is a crisis at hand. At the beginning, SWITCH sought to engage a number of media personnel and some of these remained with the network.

Concerning participation of marginalised people, unlike rural water management where community members make a direct input into the management of their water supply and waste water management, in urban areas the space for public participation is limited and city dwellers do not necessarily have a direct input in management of their water resources. This means that in reality there is very little influence that consumers have in the supply of their water or in their waste management or storm water management. They are at the receiving end of all decisions and have very little input. This may be the situation because the water company has the responsibility for planning and delivering water to consumers. The consumers are relatively far removed from the management of their water. For example, water for the city is supplied from outside the city. Most spaces for participation of community members are usually created through pro-poor projects such as Water for African Cities (WAC), which had community involvement as part of their work packages. It was one of the objectives of the learning alliance to create spaces for marginalised people to become interested and involved in water management. Within the learning alliance, space was created for community members to meet with managers of the water company to make decisions regarding their water supply. Apart from project activities, there are other areas in which consumers can participate; being good citizens; paying their bills and reducing illegal connections for water supply; for waste water management, having their own toilet facilities; controlling storm water by not building in water ways; stopping indiscriminate dumping of solid waste. With urban agriculture, farmers have to directly

deal with their water resources (this is further discussed in section on demonstrations to improve on the water supplied to farmers).

5.2.4 What are the relationships between stakeholders in Accra?

This section describes the apparent functions and relationships of the structures identified in the previous section. The formal institutional setup shows a sector undergoing various changes and reforms while at the same time interfacing with a lot of informal systems. There are no formal obligations for formal institutions to have links with informal arrangements, however in practice there are many interactions between the formal and informal systems especially where there are potential conflicts of interest or need for coordination of sector activities. Most of the institutions listed above (5.2.1) were established or “re-established” in the 1990s as part of the water sector reforms. According to a report by Cleaver and Hanks (2005), institutions can be shaped or designed by external agents and provided the needed attention is paid to the structures (rules and roles) and norms (relations of trust and co-operation) collectively beneficial outcomes may be achieved.

The current institutions in the water sector in Ghana are largely shaped by external interventions; these include donors and commitments to international agreements. Funds to support these tend to shape and reshape institutions. Examples include the water sector reforms which led to the privatisation of Ghana Water Company which was promoted by Donors and linked to an inflow of funds to support the ailing water sector (Whitfield, 2006). This makes the donors very powerful when it comes to decision making in the water sector. The privatisation of water supply management resulted in some segregation of urban water management functions; the management of waste water was sent to the Assemblies and the management of rural water was given a new institutional set up which has performed relatively well over the years to increase coverage of rural water. This study however, focuses on the changes at the urban water level. The moves toward privatisation were mainly donor driven (Whitfield, 2006) perhaps with some expectation and promises of increased investment for a better performing system. Privatisation of water supply was strongly challenged by Civil Society groups but in the end, the government of the day pushed forward with its agenda. At this point we see a top down approach with a lot of power placed in the hands of central government with backing from the development partners. Civil society groups were not well organised and they were mainly supported by external funding agencies. In a conversation with one stakeholder who was in support of

privatisation, he indicated that “*we are not worried about the ‘noise’ that these CSOs²⁰/NGOs make, we hear their funding will soon be over then we know that they will not make noise again*”. True to that statement, within the period of engagement of stakeholders (2007 to 2010) there were times when the CSOs/NGOs would suddenly stop talking and then come up again after some time with a new lease of life (though not necessarily new messages, new information, or new research. The CSOs did not always have strong research to back their points, even if the points they made seemed rationally sound or made good sense. This meant that their opposition to issues was very weak).

Another example of donor influence is the adoption of IWRM and the establishment of the Water Resources Commission of Ghana, following a Water Resources Management (WARM) study which was commissioned by the World Bank in 1998. In recent times, there has been the largely donor driven, Sector-Wide Approach (SWAP) to harmonize approaches for dealing with water and sanitation, but there was a strong move to get the government to take ownership as they note that without government ownership, the process becomes unsustainable. Other notable on-going activities are the Water Sector Group, the Annual Donor Conference/ Ghana Water Forum, the Switch learning alliance and the national level learning alliance platform (which is supported by SWITCH partner IRC).²¹

Interviews with stakeholders show that they identified a range of relationships among stakeholders even though some of these were difficult to define at times. In such cases, a relationship is defined as having some form of collaboration and can be considered as informal relationships. These are recognised by stakeholders based on their practice and existing social norms but are not clearly defined in the formal institutional setting. From the stakeholder relationship diagrams it can be noted that most of the informal relationships are characterised by collaboration and information exchange and this can explain why the stakeholders saw the learning alliance as a point of information (discussed further in chapter 7 on outcomes from the LA). Initial perspectives from stakeholders indicated weak links among the various stakeholder organisations. Initial perspectives from stakeholders are presented in figure 5.1.

²⁰ Personal conversation with stakeholder from service provider organisation during one of the interactive sector meetings

²¹ These programmes and activities were not in place at the beginning of the SWITCH project, they were started after the learning alliance had started

The key stakeholders with the strongest influence and importance (see section 2.3.4 on stakeholder categorisation) are the government institutions, because of their role in decision-making. Although from the project perspective, the city authorities were expected to have a larger sphere of influence and also to be the primary stakeholders in urban water management, it is noted from the existing institutional space and stakeholder perspective that they played a minimal role, particularly regarding water supply which is handled by the water company. When it comes to waste water management, even though the city authorities are expected to be active stakeholders, their limited capacity makes it appear that they have a limited influence and role. In practice, there are a lot of private sector players that provide environmental services in the city. Furthermore, the central government supports the city authorities with budget when it comes to waste water management. Even though civil society and NGOs represent the consumers who are affected by decisions, they were not considered influential by stakeholders. This could also be due to the fact that some of these groups relied extensively on external funding to support their activities and without funds, they were often inactive. Although development partners and donors are not primary stakeholders they are considered to be very influential because they provide funds for projects. The role of donors cannot be underestimated in a country that largely depends on donor funding for most projects: in the SWITCH project, they were considered as one of the key stakeholder groups. The Research and Training Institutions (RTIs) and Development Partners (DPs), farmers and community members, media, NGOs/ local advocacy groups are groups that are not part of the official set up, but play key roles and therefore were brought together as part of the LA membership. A network of donors (known as the water sector group) is also a very key player when it comes to the informal institutions which have a lot of influence. They facilitate high level discussions among government ministries and development partners and the network is used to promote projects and programmes within the sector. In a summary of stakeholder interviews and perceptions of influences and stakeholder relations in the sector, we note that the DPs are given relative importance and in the diagram we see the direction of giving moving mainly from the DPs to the key stakeholders in the water sector. See figure 5.1 below.

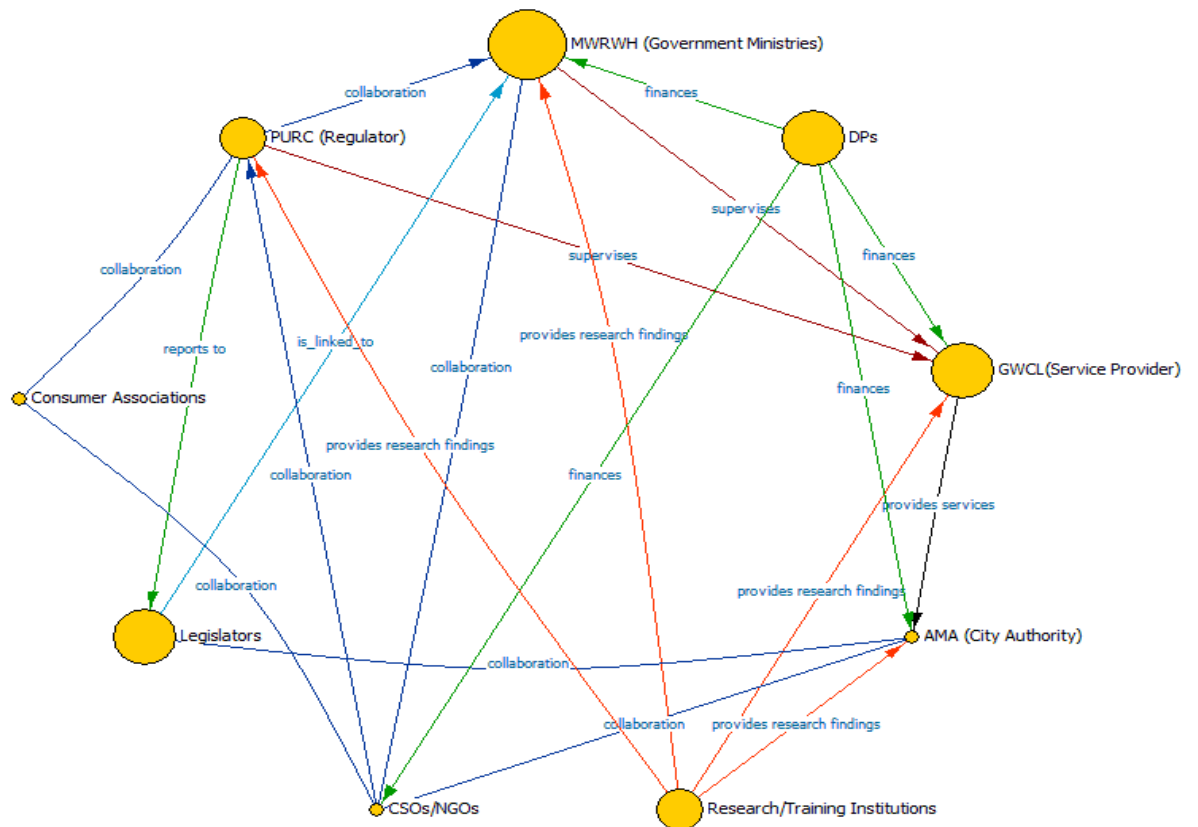


Figure 5-1 Example of stakeholder relationship diagrams (based on stakeholder interviews conducted by the researcher – size of stakeholder shows their level of influence)

Familiarisation with donors was part of the initial scoping (discussed in the next section 5.3.5), and representatives of four donor organisations took part in the first learning alliance meeting. Donors have their country programmes and their interest in urban water management is shaped by their respective country strategy. IUWM was not an explicit part of the country strategies of the donors, but because various aspects of urban water management and waste water management were part of some of the country strategies of the donors, they were engaged through UWM – technologies.

Initially the project tried to engage development partners through the scoping. These organisations were invited to the learning alliance meetings but not all of them attended. However, over time, instead of engaging with individual donors, the project through its partners was able to engage and exert influence through another network; the Water Sector Group (WSG). SWITCH was not part of the group because the project was not a major donor and did not have the level of financial clout or influence of a donor, but through SWITCH partner (IRC) participation in the WSG meetings, the activities of the learning

alliance were shared with the WSG. In this direction, the influence of SWITCH research and the Resource Infrastructure Demand and Access (RIDA) Assessment for Accra were shared with the group and in particular, the World Bank which is part of the group and as noted in the section 5.3.1 is the main donor supporting urban water and sanitation projects in Accra. The EU representatives also noted that they followed activities of the SWITCH LA platform through information from the Water Sector Group meetings. This shows how an informal alliance with the WSG was able to inform and influence them with information from the LA as opposed to the formal process of sending letters, some of which had not got responses since the beginning of the project.

The National Water Policy recognises the need for collaboration among stakeholders, though no specific strategies or framework are indicated for this activity. The National Environmental Sanitation Policy also recognises the need for interactions among stakeholders. The methods and strategies for these are not clearly spelt out and there is no clear institutional mandate to do this. There is an open process of engagement whereby stakeholders from any of the groups can contact the other stakeholders for information or for collaborating on a project. It is easy to map out formal institutions, but not the informal ones.

As noted in the previous section (5.3.2) the participation of citizens in urban water management is very limited. In an earlier survey of stakeholder influence at the beginning of the learning alliance, it was noted that government agencies and institutions were given higher rankings. The spider diagrams below show the perceived level of stakeholder influence constructed at the beginning of the learning alliance. Stakeholder perceptions on influence and whether there were any changes in the views of stakeholders later on towards the end of the project, are provided by the comments made by stakeholders interviewed as part of this study. Responses on stakeholder influences are provided in Chapter 7 under discussions on power relations.

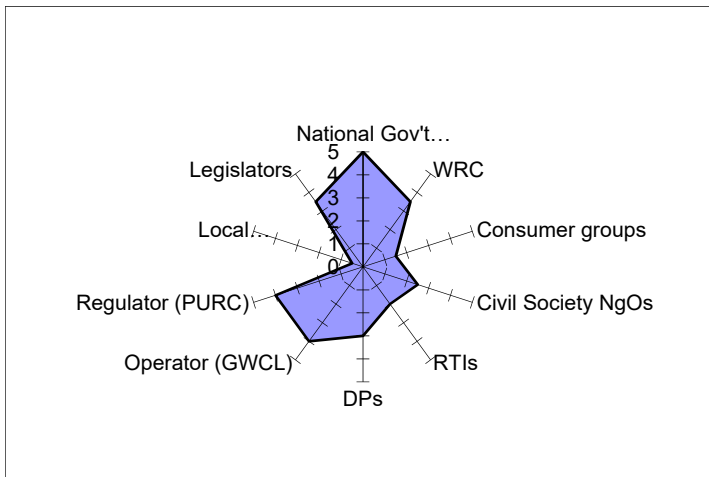


Figure 5-2 Stakeholder Assessment and perception of influence within water sector – view from national government stakeholder (based on stakeholder interviews conducted by researcher).

This stakeholder's view of the water supply sector shows the national government as having the most influence in terms of decision making. His perception could be influenced by the fact that he worked with the ministry and was therefore likely to view the role they play in coordinating the sector as giving them a higher level of importance or influence in the water sector. Beyond the ministry, the stakeholder viewed the Ghana Water company and the Regulatory agencies as also being very important and influential. He further considered the donor agencies as having average influence. He gives a very low level of importance to the city authorities and local government in terms of water supply. Similarly, he gives consumer groups a low score, but considers Civil Society and Research and Training Institutes as being of relative importance and scores them higher than the local authorities. In comparison, another stakeholder who works for a research and training institution, ranked the Water Resources Commission (WRC) as being the most important. This could be because in his line of work, his institution interacts mostly with the WRC. He regards the regulator, the water companies, ministry and research and training institutions as being of the same level of importance, but gives consumer groups and civil society groups a very low level of influence (0-influence). His view is informed by the fact that he did not note any participatory mechanisms for consumer and civil society groups to influence the water company. Similarly, other stakeholders were interviewed to explore their understanding of stakeholder relations and interviews. The perceptions of the stakeholders were based on their work and the stakeholder group that they interacted with regularly.

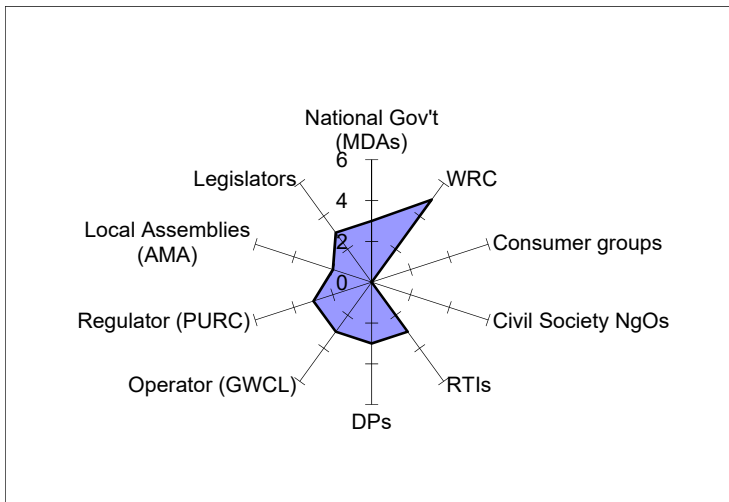


Figure 5-3 View from stakeholder (WRI) (based on stakeholder interviews conducted by researcher)

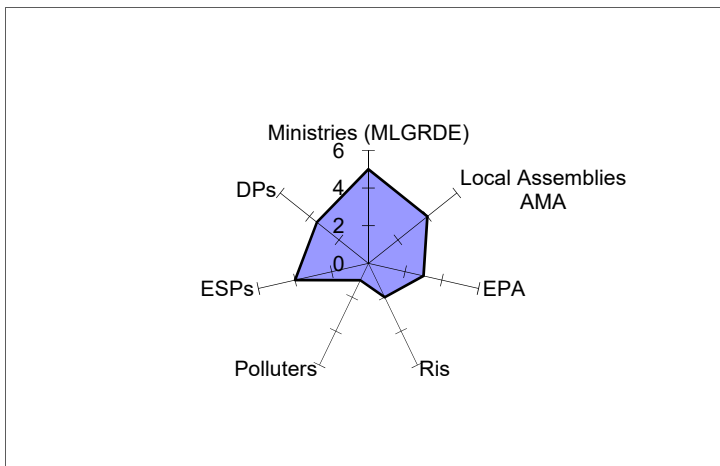


Figure 5-4 View from local government stakeholder - department 1 (natural systems group) (based on stakeholder interviews conducted by researcher)

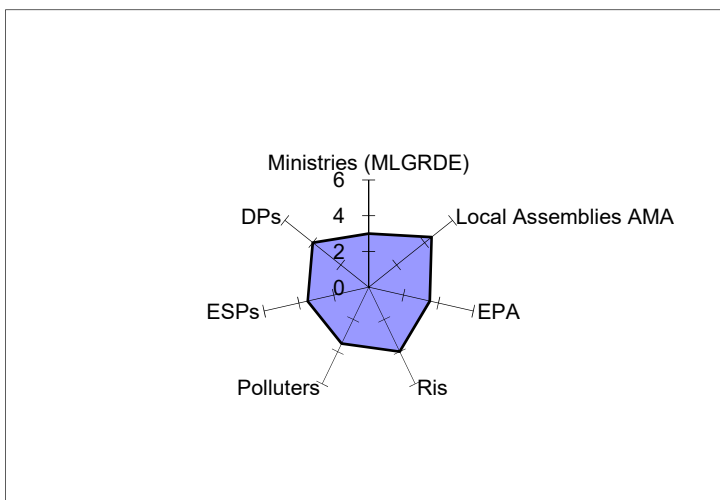


Figure 5-5 View from local government stakeholder department 2 (natural systems group) (based on stakeholder interviews conducted by researcher)

In terms of the formal institutional setup which the learning alliance dealt with most of the time, interviews with middle level stakeholders indicated the high influence of politicians and heads of institutions. Stakeholders' mention of a top - down approach shows that the level of influence of most stakeholders is low; or they perceive that more decision-making lies with government institutions, particularly with the political heads of the institutions. While a bottom-up approach is preferred according to current participatory approaches, the institutional setup and comments from stakeholders is suggestive of a hierarchical system. In such a system, creativity is often limited and actions tend to be based on suggestions or directions from a boss. Actions of stakeholders are often geared at pleasing a senior officer. Patrimonial relationships are often developed in this kind of system (Sehring, 2009).

There is a need for the right balance between a bottom up and top-down approach. Especially in instances where those at the bottom rank are not as empowered as they should be. Interests of some of the stakeholders in the learning alliance were shaped by the interests of their institutional head. Thus, getting people at the top to listen to the technocrats gives confidence to the technocrats who take part in the learning alliance meeting. This is one of the ways of ensuring that ideas can be fully utilized to bring out the more concrete results that stakeholders seek for. This is shown in the level of people that were met during scoping. Most stakeholders that were interviewed were middle to senior level. There was expectation also that senior level participants would be part of the LA meetings, but the reality was that they also had other commitments to their jobs that prevented them from actively taking part in all meetings.

One of the informal power relations that will be discussed here is the role of a champion in the stakeholder process. Some statements from stakeholders interviewed showed the importance of what can be described as a "champion" with credibility to gain stakeholder acceptance of the process and encourage stakeholders to be part of meetings. A champion also provides access to high level stakeholders and this is the work that two of the champions did for the SWITCH LA. A champion may not necessarily have to be directly part of the project team, it could also be a key stakeholder that is identified as a potential champion and who drives the process. During the initial scoping exercise and at the start of the project, three potential champions were identified. These did not include the researchers, but subsequently the researchers and SWITCH partners played the role champions of the process. The role of a SWITCH partner representative's influence in the water sector group and among donors in getting stakeholders/donors to take note of

SWITCH was significant. The influence of this stakeholder got SWITCH into major discussions with a main donor who then became a champion of the project and that served as an avenue for disseminating and having impact with the research and learning alliance process (See chapter 6 for discussions on RIDA). This partner's involvement of SWITCH in major stakeholder meetings led to the reinforcement of the role of SWITCH as a legitimate provider of information which further improved relations with the heads of the local authorities.

Another type of champion identified is one that the stakeholders look up to or respect. In Accra, the coordinator was held in high regard by stakeholders, most of whom were her former students. In the local Ghanaian social setting where there is respect for one's elders and one's teachers, this set a stage where from the beginning, some stakeholders were drawn to the learning alliance. Recognising the role of such a broker is important and the role that such champions can play should be clearly defined and made more strategic. While these champions can open doors, another issue comes up that needs to be managed; the expectations of stakeholders. Once they see you as a source of information, the stakeholders then begin to look up to you to provide solutions. This is where brokering the process becomes critical to balance the expectations of stakeholders with the actual process.

In the institutional landscape described, it is noted that the farmers in urban agriculture do not feature much in the mainstream water sector. They feature more in agricultural sector policies. They are however a very marginal group of stakeholders and a small proportion of the population. Most of those involved in urban agriculture are migrant farmers from other regions other than Accra with most of them having a low level of education. Apart from challenges with water supply, the farmers also have to deal with competing demands for land, issues of land management and competition with development and developers, as well as institutional owners of the land. The area for urban agriculture has significantly reduced over the years and the number of people involved in urban agriculture is very limited. An interview with the farmers indicated that this affects their ability to make long term investments on their farms. This has also hampered previous efforts to provide boreholes for farmers. The provision of boreholes is a long-term investment which requires relatively larger capital than what the farmers could typically afford. The government agencies providing support services for farmers were not able to provide boreholes because they were unsure whether the farmers would be moved and thus would not be able to utilise

the borehole. Urban agriculture farmers have to rely mainly on waste water going through the drains to support their farming; this is cheaper than using treated water and sometimes there is no access to treated water. The use of waste water represents an advantage since the crops can make use of the nutrients in waste water for a better yield. The use of waste water however, has some negative social perceptions; the provision of a low-cost water treatment system for farmers was therefore seen as a useful option. This is one of the demonstrations that the learning alliance sought to do with researchers and the stakeholders, in addition to showing how to improve the quality of products from the farms. Two demonstrations were planned in this direction and are discussed in chapters 6 and 7.

Sector projects and programmes have become a key feature of the informal water and sanitation sector in Ghana and by extension, the urban water management setup. These projects are mainly donor funded, focusing to a large extent on infrastructure provision. This study recognises these projects as an integral part of the sector, especially their contribution to knowledge management and filling gaps with regard to infrastructure provision where government or public organisations are not able to reach. These projects mainly deal with poor areas and slums in the city. With these projects and civil society processes, participatory approaches have been adopted and these have led to various informal networks being created. Now informal networks are gaining more legitimacy in the sector and they are seen as safe platforms for the exchange of information. The institutional set up creates spaces for informal structures most of which are externally initiated, mainly by donors or by NGOs with funds from external donors and development partners. Other examples of externally initiated programmes include the SWITCH project and subsequent projects that promoted the concept of learning alliances. To a large extent, the LA focused mainly on bringing actors in the formal institutions together while involving the local communities to bring on board marginalised/ players in the informal sector. Farmers in urban agriculture were also included in the learning alliance. These players also have their own rules even though not recognised by the formal set up. Examples are land tenure or management of land by urban farmers as indicated by SWITCH social inclusion studies.

The learning alliance fits into the informal setting of water supply management for which we note that there is a lot of space and opportunity for informal processes in Accra. Among the innovation systems actors it fits well into the intermediary domain (see section 2.3.3.1)

which is seen as a gap in the institutional set up described in Accra. The following presents a diagram on stakeholders in Accra and their role within the various innovation domains:

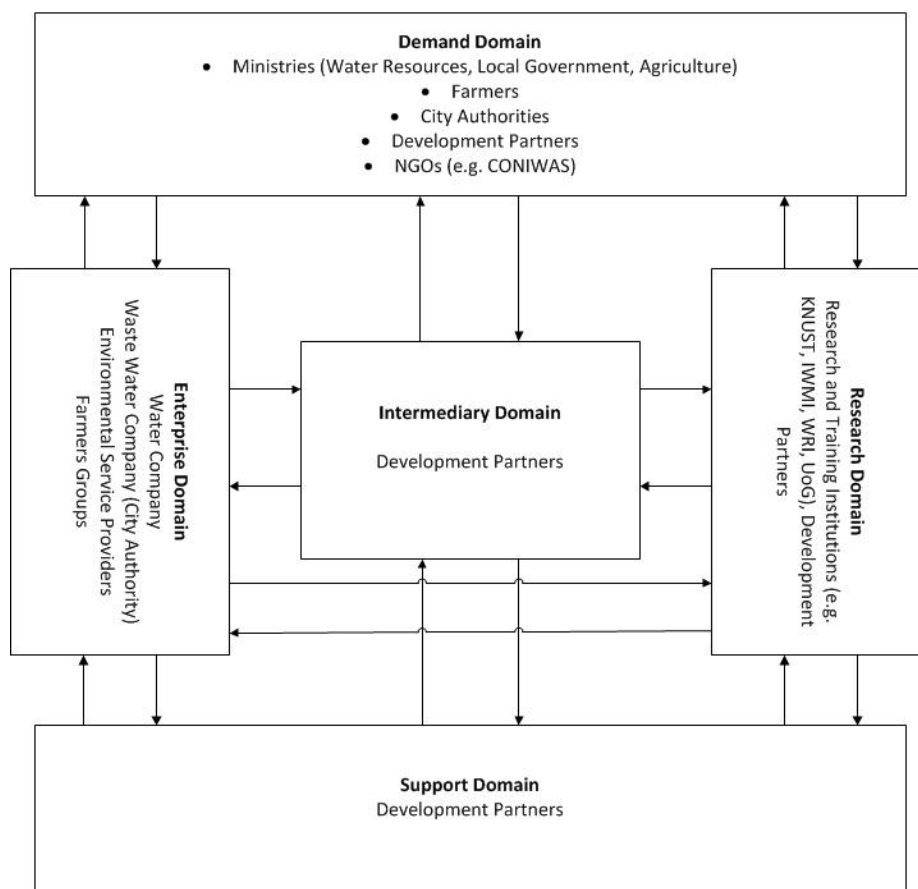


Figure 5-6 Innovation Domains of Actors in Accra (source: this thesis, based on Hall et al.).

There is a gap in the intermediary domain. The stakeholder group that can be placed there is the development partner group given that they sometimes initiate projects that have components that require stakeholder engagement. In terms of indigenous institutions, there is also a gap in intermediary organisations. Even though the national water policy recognises the need for engagement and interaction among stakeholders, there is no clear mechanism defined. From the diagram, it is also clear that the role of DPs permeates the different domains. This is because of their role in providing technical and financial support to the water sector. They also commission research to support their country strategies as well as to document the outcomes of their project interventions. They are also users of knowledge and through their activities and projects, sometimes provide space for knowledge sharing. The WSG is an example of an intermediary group at the high level, but at the middle to low level there is a lack of an intermediary group that brings sector players together to promote interaction and sharing of knowledge.

The role of the donor within innovation is in the support domain, even though in reality they play a key role given that they are the ones with funding and therefore have a high influence in decision making. The research domain has limited influence in this set up. The users do not have a role to play in the set up even though, following principles of good governance, their needs are to be considered.

5.2.5 Stakeholder selection processes: scoping exercise and organisational interest for attending Learning Alliance meetings in Accra

Learning alliances are designed for joint and collective action by the stakeholders who are involved in the process. The actions from stakeholders are based on incentives or motivation. The expected action from stakeholders in this case was their active participation in the learning alliance and possible uptake of ideas around integrated urban water management. The rules of the game have to provide incentives to encourage players to take up the actions that are needed, or prevent them from taking actions that are not wanted, thereby having the players or actors acting in the way that is expected. This section explores the interests of organisations in being part of the learning alliance. The analysis of interests is based on their organisational mandate indicated in section 5.3.1 and on the information provided by stakeholders during the initial scoping exercise. This is followed by an assessment of motivation for being part of the meeting, as indicated by the learning alliance members who were interviewed.

At the inception of the project, the SWITCH team contacted representatives of the different categories of stakeholders. The challenges outlined by stakeholders during the initial scoping can be categorised into: governance challenges (Theme 6 with four workpackages, on 1. Governance for integrated urban water management 2. Learning Alliances and 3. Social Inclusion 4 Finance, cost recovery and institutional models); challenges with storm water management (Theme 2), technical challenges with water supply and demand management (Theme 3), and management of waste water systems (Theme 5). Some of these topics were part of the learning alliance and the interest expressed by the stakeholders provided an opportunity or a possible interest for them to be part of learning alliance meetings. Due to time and resource constraints, the initial scoping exercise could not cover all the key stakeholder types that are given in section (5.3). As noted by the scoping report, there was under-representation of the following groups during the interviews:

- Politicians such as the mayor and members of parliament
- Representatives of private sector companies

- Civil society groups such as local NGOs, unions and professional associations
- Water user groups
- Local activities
- Donors
- Media

The scoping report recommended that these stakeholders be invited to be part of the LA to ensure balance of the different stakeholder groups. Furthermore, these stakeholder groups were recognised as groups that could promote the learning alliance in the city. These stakeholder groups were all invited to the first learning alliance meeting. Attendance of the stakeholders at the meetings is discussed in chapter 6 but the interests and mandates of the stakeholder had an influence on their participation in the learning alliance. While these groups listed above were seemingly under represented, and in some cases absent during the initial scoping, their absence is reflective of their roles indicated in section 5.3.1.

While Members of Parliament (MPs²²) are important, they do not often initiate bills. Bills are usually initiated from the executive and sent to parliament for approval. The executive is also responsible for the direct implementation of government business and activities. In this regard, the primary decision makers for influencing become the members of the executives. Influencing parliament comes in when there is a bill to be passed, a law to be made, or policy document to be approved (though they could bring in a private member's bill or raise questions about issues that would require responses from the sector minister). Ensuring that your statement gets included in the policy and is acted upon often requires dealing with members of the Executive. The political aspect of water management cannot be ignored. As mentioned by some stakeholders, "*politicians decide which meetings they have to attend*". In this case the Executive, ministers become the key stakeholders to deal with. The relevant sector ministers were contacted and invited to the initial learning alliance meeting and one of them participated in the initial learning alliance meeting.

Large private sector companies, though they could have a potentially significant influence in the urban water sector through financing, do not play an active role in urban water management. Most private sector companies are involved in providing services and in this

²² MPs do not also take active part in the implementation of urban water management (the project did not also have a specific deliverable which involved the promulgation of a bill/law – compare this with Birmingham where researcher gets to interact with MPs in relation to regulations for flood management).

regard, they are more dependent on the public sector for jobs. The other group of private sector companies involved are the small-scale water service providers. There is an association of Private Sector Utility Providers but their members usually work in the rural sector and the group has not been very active since it was formed as part of a donor initiated process in 2004. Their work is mainly to manage utilities that have been provided by the public sector, not providing their own utility service.

Trade unions are significant and represented on the Public Utilities Regulatory Commission (PURC- regulator). They were invited to the initial meetings but they did not become part of the LA. Professional associations, while recognised for providing expert advice, are often called on when there are challenges and their role is not proactive in terms of promoting concepts such as IUWM. They were not engaged to a further extent in the LA, but they were initially invited to be part of the LA.

Apart from the farmers, there are no consumer associations related to water use. There is the consumer association of Ghana which looks at drinking water issues. As compared to the rural water sector, local community based groups and associations do not play a strong role in urban water supply.

In Ghana, local financing for water projects is mainly limited to government. Some of the banks through their corporate social responsibility programme may provide water for some rural communities but are not active in urban water management. Finance organisations which have an influence on the sector are mainly the development partners groups. As mentioned previously, these donors have the water sector group, a member of which became an emergent champion for the learning alliance.

Donor communities can finance SWITCH activities, but donors have their own country strategies and projects must fit within these strategies to be funded. The learning alliance did not have a demo beyond urban agriculture that fitted within the country strategies of these donor groups. However, since the World Bank had an interest in the urban water sector in Accra, the Learning alliance used the research/ RIDA to influence their city strategy for urban water and sanitation management and were part of the consultative process that led to the development of the World Bank funding for sanitation and water projects in Accra.

Apart from the interest expressed by the stakeholders in the learning alliance, some opportunities and potential resources were identified by the SWITCH team. Potential roles were identified for stakeholders who were interviewed; potential champions were identified from Development Partners, Water Directorate and the Water Resources Commission –WRC (but at the inception of SWITCH the champion identified at WRC had changed jobs) – they were stakeholders who during the scoping exercise, explicitly expressed support for the LA and were highly placed or were considered to have significant influence in the water sector in Ghana. Potential opportunities were also identified for training from KNUST, University of Ghana and WRC. Funding from development partners and strategic linkages were identified with other potential platforms. Workshop facilities were to be provided by the Science and Technology Policy Research Institute (STEPRI), International Water Management Institute (IWMI), Local Government Training Institute, Ghana Water Company Limited, Ministry of Food and Agriculture. No stakeholders were identified for activities relating to information, promotion and planning of IUWM. This finding aligns with the gap noted with the intermediary domain (section 2.3.3.1) when comparing the different domains for actors in innovation. These opportunities and gaps and how they were utilised or improved during the learning alliance are discussed in the next two chapters.

5.2.6 Process of Embedding Research and Learning alliance in Accra

As noted by the initial scoping, the urban water management challenges that stakeholders in the city wanted to deal with were related to technical, social and institutional issues (outlined in Chapter 4, section 4.4.2). These issues raised by the stakeholders fell under Work Packages 2: Storm water management, WP 3: Water demand management, safe-reuse of urban water. WP 4 Ecological sanitation and decentralised waste water management, WP 5.2, 5.3 and WPs 6.1 to 6.3. However as noted in earlier, the project had only workpackages 5.2, 5.3, 6.2 and 6.3. in Accra. It was recognised at the initial stages that the work done by the other WPs could be used to generate interest among stakeholders in the LA. The research process and the workpackages were discussed into detail under section 4.3 and the outcomes will be discussed in chapter 7. The research that was expected to be done through the LA process was mainly researcher driven from the onset. The changes to this process and outcomes are discussed in chapter 6.

One of the expected outcomes of the project and LA process was to get researchers out of the periphery into the main action areas of the water sector to enable them not only to have

influence (possibly changing stakeholder perception about researchers), but also to get stakeholders to take up their research findings more readily. The outcomes of this effort by the researchers to get into the sector are discussed in chapters 6 and 7.

In Accra, the partners were research organisations. The initiators of the project in Accra could therefore be categorised as researchers. During the drafting of the project proposal and description of works, the researchers in the partner institutions were assigned workpackages according to their research areas. As noted from prior sections, the research workpackages that were assigned to Accra based on initial assessment of research interests were:

- WP on Use of Water for Urban Agriculture and other Livelihood opportunities
- WP on Use of Natural Systems for Waste Water Treatment
- WP on Social Inclusion for urban water management

These fell under themes 5 and 6 outlined above. Even though the learning alliance was a workpackage, it was not assigned as a research area to a particular researcher in the city. The idea was that all the researchers would work together in the learning alliance with other stakeholders from the city. One of the researchers therefore was designated as a learning alliance coordinator to coordinate research work with the learning alliance activities. One of the assignments of the coordinator was to bring together other stakeholders from the city to form (initiate) the learning alliance and together identify a vision for the city. The role of the coordinator and facilitator are further discussed under the section of agency (inputs for sustaining learning alliance – chapter 7).

As part of the project, each researcher within a city had a budget assigned to the activities they were expected to undertake. As a result, prior to the formal start-up of the learning alliance, the researchers already had their budgets, workplans and expected deliverables already drafted. So, while the idea of using the learning alliance was to plan the research together with stakeholders and implement, to some extent the type of research to be done had already been decided prior to the learning alliance. This also explains why when there was priority within the city on some other thematic areas, there was concentration on two themes which were linked to the research areas of the SWITCH partners that were selected. The influence of this situation on the learning alliance process is discussed further in chapter 6. The areas selected for work in Accra were related to urban agriculture and

productive uses of water, sanitation (waste water treatment using natural systems) and water supply for the urban poor.

With regard to urban agriculture (UA), from the institutional set-up described in relation to urban water management, it appears to be an informal and marginal activity, with the farmers trying to come up with their own innovations. The farmers had a local association, Dzorwulu Cooperative Vegetable Farmers' Society, which was established as a branch of the Greater Accra Vegetable Farmer's Association in 2001. The secretary of the farmers' association was a regular participant in the SWITCH learning alliance meetings. In terms of institutions, it does not appear to threaten or conflict with other institutions. The only challenge with UA as related to the public is the perception of public health. In addition, UA farmers have to deal with issues of land security given competing land uses. The researchers' involvement in UA gives it legitimacy and the outcomes related to this are discussed in chapter 6. In addition, the involvement of researchers also provided support to improve the innovations being tried by the farmers. For water supply, particularly to the urban poor most of whom do not have access to a water supply network, it is very political as noted in section 5.3.3. Considering the level of investment required to make changes it was not expected that much change would be made in terms of access within the short time of the project. It was however expected that the results of the research would improve the inadequate research information regarding access to water supply in these areas for planning purposes. The question then would be the influence that researchers could have in the informal water supply and what it will mean for those involved in informal water supply as well as citizens without access.

Concerning the productive uses of water, there was not much existing research information prior to the project. Through one of the SWITCH project partners, research was undertaken to improve the information on productive uses of water in the city. This includes water use for UA and water use for livelihoods, particularly for residents of low-income communities.

Sanitation is a challenge and quite political. Sanitation in the sector covers everything including solid waste management (5.3.1). With no working treatment facility for waste water and with challenges to solid waste management, there were high expectations for solutions in this area from the onset.

From the initial scoping, the involvement of planning or planning activities appears to be a challenging area to deal with. As noted, while urban planning process is a key area in IUWM, it appeared not to have the level of influence expected at the beginning. There was an inadequate level of capacity for planning for water and sanitation at the city level given that the LA was expected to undertake visioning and planning activities. While planning was not part of the initial research workpackages for Accra, it was added in the 2nd year of the learning alliance, following from the visioning and scenario building activities that were undertaken in the first year. The outcomes of the learning alliance related to planning are discussed in chapter 7.

Other areas such as storm water management even though it came up for discussion, could not be addressed. However, external researchers undertook some research in those areas, for example, City water research and storm water research (Middlesex). They could not however, become part of the main learning alliance due to challenges with distance (administrative issues within the project). There were however, some opportunities to bring on board other thematic areas. These thematic areas 1 and 6 were deemed to be cross-cutting. With the theme 1 becoming part of the learning alliance focal areas in Accra, the learning alliance metamorphosed into a kind of strategic planning platform (section 5.2.2.3). This did not affect the research of the city but rather expanded the activities of the learning alliance to focus not only on research but also to consider the development of strategic directions for integrated urban water management in Accra.

The focus of the learning alliance has implications for the diversity of the learning alliance and the different stakeholder groups that can be brought on board. Having a single focus means that the learning alliance becomes smaller and issues can be clearly highlighted. Having different issues means that more stakeholders have to be brought on-board and sustaining the interests of all stakeholders in all the activities of the learning alliance becomes challenging. Given the varying focus of the learning alliance in Accra, at the beginning of the learning alliance process, stakeholders were divided into Water supply and Sanitation groups with the Water supply group dealing with issues under theme 6. The sanitation group dealt issues related to theme 5. During the process and during some of the meetings, the stakeholders were sometimes further split to have a storm water sub-group (this theme was not originally part of Accra and could not be brought on board) and in the 5th LA meeting the groups were also split to have a planning and coordination working group.

Throughout the process, the researchers remained champions of the process but other stakeholders were given roles to play.

5.2.7 Summary of Discussions on Institutional setup in Accra

The institutional analysis of the water sector in Accra indicates an evolving sector. Reforms in the water sector in Ghana redefined the roles and responsibilities of water institutions, especially those of water supply and waste water management. This includes the separation of functions of waste management to the city authorities and the establishment of regulatory agencies to improve on accountability. Even though part of water management and under the Ministry of Water Resources, the water policy did not include much on stormwater management/ management of floods. However, the national sanitation policy which is spearheaded by another ministry has statements on flood management and gives the role to the assemblies. This shows that the sometimes disjointed nature of water management provides a structure that is not conducive for integrated water management in reality. There is an inconsistency between the principles surrounding the policy and some of the policy actions and the position of institutions.

Improving services also has a component of dealing with people in low-income communities. Bringing together these stakeholders made the issues of what goes on in the low-income communities clearer to the different players. These are discussed in chapter 7. The process of reforms also brought the participation of NGOs and community based organisations into the institutional set up. Participation and transparency in decision making is supported by a tradition and culture of dialogue and consensus in decision making which is a common feature of our traditional systems. In recent times, Ghana has seen the proliferation of NGOs and civil society groups as democracy is deepened. This is good for the water sector because it has also brought the media on board. While these factors signify good progress made towards a more bottom-up decision-making process, the role of politicians in setting the agenda cannot be neglected. The role of the media in setting public agenda and discussions is significant.

Small-scale service providers and tertiary providers could not be brought on board the learning alliance because they did not have well-organised structures to engage with. However, members of the community were involved through their locally elected leaders. There are social norms that shape the informal institutions; for example, within the formal institutional set up, there is no specific role for research and training institutions (RTIs).

Given, however, that they generally provide training for sector professionals and engage in research, RTIs are generally seen to contribute to knowledge and are accepted by sector stakeholders. In the water policy, however, they are not mentioned as part of the providers of information and they are not mentioned also as key stakeholders. This means that while generally they are accepted by stakeholders as part of the sector, they are not recognised formally. Perhaps they play an informal role; one of the significant contributions that was made by the learning alliance was the creation of a space for consistent dialogue between the research institutions and the broader group of stakeholders and institutions in the water sector.

If institutions are referred to as the rules that govern a process, an institutional level change can loosely refer to a change in the rules of the game. As discussed, there are formal and informal institutions or rules. Formal rules mostly refer to what has been legislated or officially accepted and often documented. The informal rules which often refer to conventions are [loosely] made and redefined based on interactions among stakeholders, especially in a setting where informal relationships have a significant meaning.

In the researcher's own experience in the water sector, a statement such as "*we are very good at coming up with laws or writing policy but are not very good at implementing it*" is often heard from stakeholders in the water sector in Accra. This statement for me suggests that perhaps we do not take into cognisance the constraints as well as the informal rules and norms that could prevent or support the implementation of formal rules. This links back to the theory of planned behaviour discussed in chapter 2 regarding intent to act and constraints that prevent the intended behaviour from taking place. This is one of the areas where we could explore the impact of the learning alliance in bringing change. How does the learning alliance ensure that a sector can move from the point of just intent to act, to an action?

5.2.7.1 Constraints to innovation in UWM identified

Despite the formal rules and regulations, there exist some gaps in terms of clear definitions, especially regarding the responsibility for water supply to peri-urban and urban poor and the overlap of responsibilities among the service providers and the regulator. There are also challenges with coordination. With the sector, the current legal framework for penalties is inadequate and therefore affects the enforcement of regulations. There are inadequate integration strategies within policies and institutional mandates. With regard to

the stakeholder institutions, the main challenges have to do with inadequate personnel and in some cases limited technical capacity for delivering services. Coupled with this is the limited funding available to the sector organisations and weak involvement of the assemblies in the urban water supply system.

As noted from the review of existing policies, water policies that promote networking exist but there are challenges to ensuring this can be done. These include not having enough staff to take up some of the activities, or the staff may not have the required capacity in terms of experience or exposure; where there are staff, the organisations may not have enough funding or budget (in a society where the sector mainly depends on donor funds and where donors support more physical projects than learning projects) and organisational challenges, there may not be enough space for learning. The question is, ‘to what extent can the learning alliance influence change towards creating a learning sector?’.

Given a set up where there is a lot of room for informal rules, the role of the learning alliance becomes significant. The institutional setup provides a space in the LA to bring about discussions without being bound by formal rules only. Stakeholders in discussions can talk about what exists in terms of law and they also talk about what exists in terms of practice. Through the learning alliance, a good understanding of the informal rules and relationships and how they affect the sector were brought to light. For implementers of policy this provided a learning point for them to assess barriers to implementation of policies. There was also the genuine desire from stakeholder groups to work together; to have a pilot to try out some of the ideas – this was not going around the formal rules, but there was a consensus to build a process in the community to learn how to improve water supply. Though it was not possible to support the pilot given the limited resources from the project (time and budget); the fact that stakeholders were prepared to redefine some of the rules to make it possible for the water company to work closely with the local authorities to plan and implement a pilot together, is significant. This is in contrast to the system where the water company on its own or with donors and NGOs comes up with a project and then seeks support from the assembly to implement it, or goes to the assembly when the project is been fully conceptualised and is ready for implementation.

Having looked at the learning alliance in a sector where there are a lot of underlying informal rules that in practice often take precedence over formal rules, this can be compared to Birmingham where formal systems work to a large extent. The role of

informal systems over formal systems cannot be overemphasised. The challenge in such a setting is that people have to concentrate on their day jobs and may not have a lot of time to take part in the learning alliance. It may be more difficult to change the system that is well established as compared to a system that is remoulding itself and has more space for learning.

Another challenge was dealing with path dependency and expectations of stakeholders which were based on their prior experiences with other projects.

When the learning alliance started, there was wariness from community members based on the fact that they are often used as objects of research and they do not benefit in the end. When there are projects resulting from research, the projects are implemented in other communities. They had an initial resistance to the research or calls to be part of research. For other stakeholders who had been part of multi-stakeholder discussions, they made comments on projects not leading to change - physical or concrete.

Stakeholders were used to a system where when they hear of a donor-supported project which is usually related to big money for a large infrastructural project. Both in Accra and in Birmingham, stakeholders during the interviews were found to have made initial assumptions when they heard of SWITCH, that the EU was bringing in funds for investment in an infrastructure project. The response to projects is often based on past experiences, but also on the fact that the water sector, particularly in Accra, is highly dependent on foreign aid. A project that purports to be bringing about learning when there are a lot of infrastructural needs and gaps does not often receive a great reception (this perception changed with time and changes in perceptions are discussed in Chapter 6). Stakeholders talk of wanting to see concrete results (in other words, projects). These point to a phenomenon described as path dependency where historical experiences decide on the actions that people take (Sehring 2009, Cleaver, 2009). Sometimes when a project does not bring funds for infrastructure development or budgetary support for sector agencies, it is not well received.

This concept of path dependency can also be related to the steps in learning described by Bandura and discussed in Chapter 2; where people learn; take an action, the action is reinforced through motivation and the people then are encouraged to repeat the action to obtain a similar reward. In some ways it can be described as a lock-in.

In such a system, stakeholders are expecting a “reward” for taking part in an activity or being part of a process. Managing stakeholder perception at this point becomes a very critical point to deal with path dependency and encourage stakeholders to try a different course of action; without having a particular tangible reward that stakeholders can relate to. When new learning is not reinforced or rewarded, actors may go back to old institutions or rules.

This path dependency could also explain why some externally initiated projects or ideas do not receive the needed support; (e.g. how privatisation of the water company did not achieve the expected results and the management contract was not extended beyond the initial contract period following calls to abrogate the contract)

Sehring (2009) points out that the persistence of these institutions is being supported by underlying interests and motivations. He however points out that this system does not remain as it is, but has the capacity to adapt to changing situations. Based on a sociological institutionalist perspective, Gonzalez and Healey (2005) identified the following principles as having an impact on capacity to change and adapt to innovation.

- The existing rules or institutions which can be within formal structures or informal norms and practices
- Interactive processes which are shaped by the existing institutions
- Interrelation between the institutional structures and agency (link between actors and how social relations are structured)
- The governance capacity generated by the interactions; and
- The place and identity of the interactions (planning field) – the actions that occur and the meaning given by social agents/stakeholders to their environment e.g. what do the institutions and stakeholders make out of the learning alliance?)

From the analysis of the institutions, one gap that is noted is that of improving governance capacity, particularly in collaboration among sector institutions, creation of learning spaces and the participation/serving of marginalised groups

As noted from the earlier institutional analysis that was done, the inadequacy of funding in the sector was a very common challenge for most institutions in the water sector in Ghana and was potentially a challenge for the learning alliance given that the project expected that based on their interest in the learning alliance, stakeholder organisations were

going to contribute a budget line to the learning alliance. The contribution of budget lines from stakeholder institutions was one of the initial objectives of the learning alliance.

5.3 An overview of the institutional context in Birmingham

As compared to Accra, the city of Birmingham represents a more developed and industrialised city with relatively more firmly established institutions.

5.3.1 Institutional Framework for Birmingham

This section makes use of information from an institutional map that was developed by Green (2007a) as part of the SWITCH project and the researcher's own involvement in City Assessment activities for Birmingham. The stakeholders are categorised similarly as in Accra. Green (2007a) suggests that the institutional framework for a city is representative of the country. He further noted that the governance system in the UK is very centralised, with the local government having limited powers and responsibilities. The responsibility for water and agriculture is under the ministry known as the Department for Environment, Food and Rural Affairs while that for local government is under the Communities and Local Government Department. This is similar to the situation in Accra where responsibilities for water and local government are under two different ministries. General reforms in the public sector in England led to the privatisation of water and waste water companies in 1989. The privatisation process led to the shares of these companies being sold off and assets being transferred to new companies. (Influenced by such changes, water sector reforms were initiated in Accra which saw the Water Company being turned into a limited liability company. In Accra, privatisation was tried but fiercely resisted by civil society. In the end, the privatisation that was done in Accra was limited to a management contract. The assets of the water company still remained with the Ghana water company). The difference between Accra and Birmingham is that while in Birmingham the same company manages both water and wastewater, in Accra the local government has responsibility for waste water management while the water company has responsibility for water supply. There are however, some places in the UK where water and waste water management are the responsibility of different companies. There are a number of regulatory agencies and in this chapter, two of them will be discussed; the Environment Agency (EA) (in charge of environmental regulation) and Ofwat (in charge of economic regulation). While he acknowledges the existence of some Internal Drainage Boards (which evolved from water user associations), Green (2007a) notes that the role of water user associations has diminished over the years. Their role is more related to surface water

drainage in some parts of the country. Trade unions do not play a significant role in the institutional maps of water management in England.

Urban farming is included as one of the water using sectors. Whilst of great importance globally, Green (2007a) notes that it is currently not of significance in the UK but has rather been redefined in terms of producing recreational, environmental and landscape services. He however notes that it may re-emerge as a lifestyle activity associated with people’s growing interest in consuming organic foods.

Similar to Accra, the city of Birmingham is subject to both National and international level commitments. Some key policy directions for water management in the city stems from the EU-Water Framework Directive and the Water Act of 2003. One of the tenets of the WFD is Integrated Water Resources Management which broadens the concept of IUWM. Green (2007a) notes that the component of stakeholder engagement in the water framework directive is quite weak. The countries are however expected to have an organisation that is responsible for carrying out the agenda of the EU WFD. In the UK, this responsibility falls on the EA.

5.3.1.1 Overview of sector agencies in Birmingham and their Roles

The following are the local stakeholders in Birmingham that were engaged as part of the process:

- Local: Birmingham City Council
- Regional to National: Consumer Council for Water (CCW)
- National: OFWAT, Environment Agency, British Water Ways, Chartered Institute of Water Engineers and Environmental Managers (professional body).

Table 5-2 Actors in Birmingham and their role in the formal institutional setup

Stakeholder group	Water Resources and Supply	Wastewater (and Solid waste) management	Storm water management & Drainage
Policy making, planning and financing	DEFRA	DEFRA	DEFRA
			Highways agency
Legislation	UK, Parliament, Public Accounts Committee		

Stakeholder group	Water Resources and Supply	Wastewater (and Solid waste) management	Storm water management & Drainage
	Parliamentary select committee	Parliamentary Select Committee	Parliament select committees
Regulation	EA (DEFRA) Ofwat Drinking Water Inspectorate (DWI) <i>Local authority –</i>	EA Ofwat	EA
Service Provision	Severn Trent Water Water only undertakers Other private water Private self-supply (Small community or individual supplies)	Severn Trent Water wastewater undertakers private waste water companies	
Professional bodies and civil society groups	Water UK CIWEM		
Consumers and civil society groups	Consumer Council for Water, RSPB (the Royal Society for the Protection of Birds),		
Allied Ministries and Departments (policy makers)	Department of local government		

5.3.2 Stakeholder Selection Process, Scoping Exercise and Process of Embedding Research in Learning Alliance in Birmingham

The learning alliance partners in Birmingham had varying roles. Unlike Accra and most other cities, there was a consultancy firm that played the facilitating role. The work packages that were undertaken in Birmingham are:

- WP 1.1 and 1.2: Development of Options for Sustainable IUWM through Scenario Planning & indicator (Development of City Water Tool)
- WP2: Storm Water Management – Experimentation on green roofs.
- WP 3.2: Safe Water Reuse (Viral Transmissions in Groundwater)
- WP 5.1: Use of Natural Systems (Research into Groundwater and surface water interactions in Hypohreic Zone)

The research focus of the city was maintained throughout the project. While the Research process in the city focuses mainly on Flash flood, rising groundwater levels and experimentation on green roofs, the Eastside project described in the previous section provided an opportunity for SWITCH to engage with city stakeholders on UWM management issues. The aims of the Eastside regeneration project included the effective and responsible use of energy, water and waste reduction, and engagement with community and social issues. The Birmingham engagement with the project identified the need for a master plan and a policy direction. Through dialogue the learning alliance members jointly undertook a study to identify the constraints to implementation of sustainable developments that were outside the control of individual developers. They considered issues such as transportation, and the planning, coordination and management of services and utilities infrastructure. They also considered issues regarding effective and responsible use of energy, water and waste reduction as well as social issues such as community engagement. The result of the study was a Scoping report on critical infrastructure for Eastside Regeneration. The report outlined recommendations and strategic actions for sustainable development of utilities infrastructure in Eastside. The report also highlighted the intrinsic link of urban water management to energy, even though this was outside the mandate of the SWITCH research project in Birmingham. The report was well received by the learning alliance members and it is significant to note that even though the SWITCH researchers had their own research direction within the project, they actively contributed to the scoping study. This process could be considered as one of the initial significant learning alliance activities that got the interest of urban water management stakeholders in Birmingham.

5.3.3 Discussion on stakeholders in Birmingham

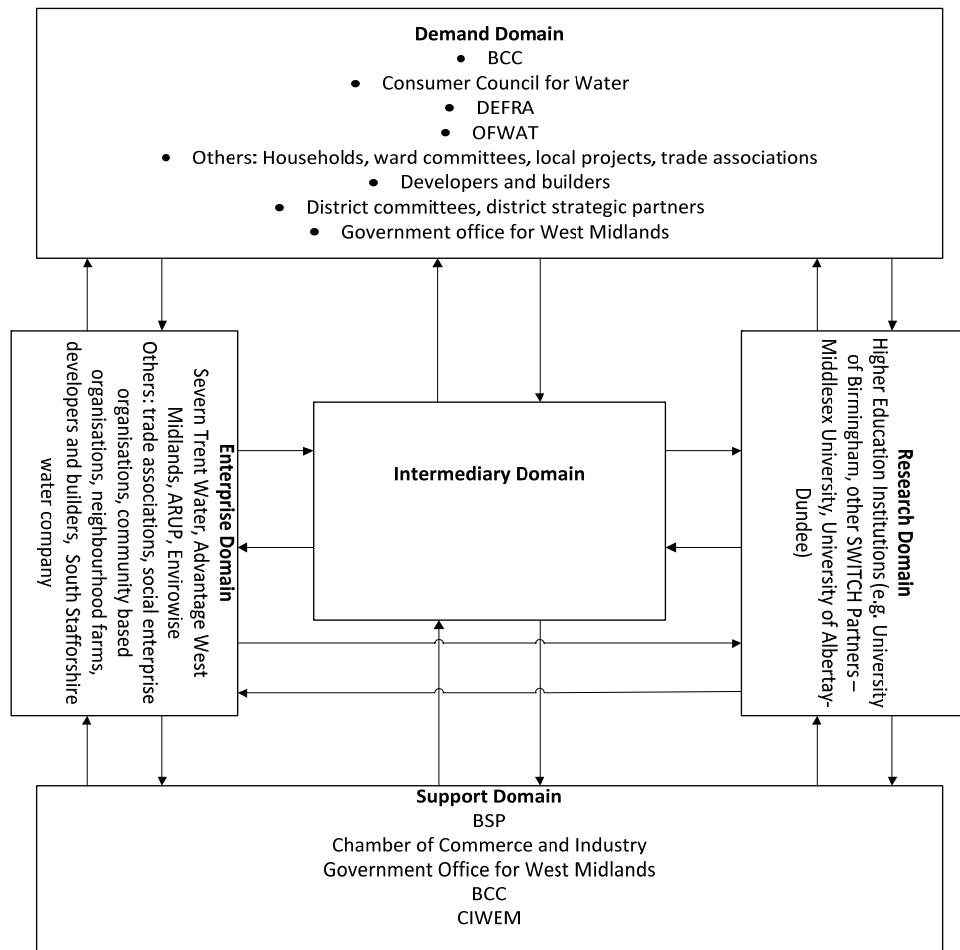


Figure 5-7 Innovation Domains of Actors in Birmingham (source: this thesis, based on Hall et al, 2010)

The stakeholder diagram presented for Birmingham shows a gap in the intermediary domain. This is a gap that was filled by the learning alliance by providing a platform at the informal level to link up stakeholders from different levels. This was especially intended to bring researchers into contact with other groups of stakeholders. Discussions and Conclusions on institutions and historical context.

5.4 Discussions and Conclusions on institutions and historical context for start-up of learning alliances

5.4.1 Discussions on institutional context

This chapter has sought to explain the history and initiation of the SWITCH learning alliance process using cases from two SWITCH Cities; Accra and Birmingham. In terms of the timeline, this represents the period between 2006 and 2007. At this point the learning

alliances had just started and while the project concepts and ideas around IUWM had been shared with the key stakeholders, the projected project based outcomes were yet to become apparent. The project activities described, the initial scoping, institutional mapping and stakeholder analysis give an indication of the trajectories that the learning alliance might follow. These were likely to shape the way that the learning alliance would turn out. This section will conclude on these and follow up in the subsequent chapters on how the learning alliance is implemented in practice, looking at key actions and activities (answers part 2 of research question 1).

Accra and Birmingham; while they are not the same in terms of economic and water management, they share a common history of their institutions managing water. Both had a shift towards privatisation of water management even though this has not worked very well in Accra given the social and cultural settings which affect the work culture. Accra is in a developing country and recently moved from a low-income country to a low-middle income country. Even though its economy is considered to be one of the fastest growing economies in the world (Butterworth et al, 2011), the level of development infrastructure and socio-economic advancement remains low. Information regarding the rate of economic growth is of interest, since it is one of the scenarios that was identified by the learning alliance in 2007 during the visioning exercise. Birmingham is in a developed, high income country. Accra has a population of 2 million with a fluctuating migrant population of 4 million; Birmingham has a population of 1 million inhabitants; access to water by residents of Accra remains at 40% while Birmingham has full coverage for water and waste water. Flooding is a common problem that is faced by both cities even though Birmingham has more infrastructure to deal with flooding (common problems in other SWITCH cities).

The challenge with a lot of residents of the city of Accra not being connected directly to the water supply network means that they end up paying more for water. A survey by the SWITCH project estimates that those without direct access end up paying as much as 12 times the cost of water charged by the water supply company. These are the people often living in low income areas (SWITCH, 2011). They are also the group that is worst affected whenever there are water shortages. Inefficient management also means that there are high losses (commercial losses). At the start of the project, the no-revenue water or unaccounted-for water was up to 50%.

In both cities, the learning alliance had more than one work package and in both cities the learning alliance took advantage of gaps in planning to make an impact. Based on the challenges of the cities and based on initial plans for the SWITCH project, the question remains with regard to whether the scope of the learning alliance could be broad or limited. *“In the SWITCH project the city level will be especially important as a platform to work towards integrated urban water management and institutional change to implement this new paradigm, LAs will need to span a wide range of issues and sub-sectors within cities including urban water supply, drainage and flood management, wastewater treatment, environmental management etc. (source SWITCH DOW)”*. These will be discussed in chapter 7.

In terms of policies, both cities show some on-going reforms as well as commitments to international agreements regarding sustainable water management. In terms of the pace of reforms, while Accra is rapidly changing, the reforms in Birmingham appear to be gradual.

With regard to the setup of the sectors, while Accra is largely informal, Birmingham remains highly formalised. In the way that the LAs were set up, they were expected to play an influential role, but a formal role was not identified for the LA. It was expected though that they could be institutionalised to continue beyond the project. In a city such as Accra where projects often fail to go beyond the funding, this was potentially a barrier to institutionalisation especially since the sector depended on a lot of external funds. However, the level of informality in the sector in Accra appeared to provide a possible opportunity. Although the LA may not have had a high level of authority or influence in the formal sector, there was the potential to influence the sector informally. This is further discussed in subsequent chapters. Similarly, the space for any formal influence was limited in Birmingham but given the highly formal nature of the sector, any influence that the learning alliance had would be expected to filter into the formal system.

In Birmingham, direct involvement of National level players was limited to some extent, while in Accra, the roles of National level players and ministries were prominent. Because Accra is also a capital city. In both cities, the mechanisms for dealing with consumers were to some extent limited, but in Birmingham there was a well-organised consumer group that could act in the interests of the consumer. In Accra however, the members of some poor communities were brought on board. This brings questions about the scale of the learning alliance in terms of horizontal linkages (across the same level of stakeholders) or vertical

linkages (among different levels of stakeholders). There are also questions of flexibility, of how it can be established and run to make it suitable for participatory governance, not strict rules. In a system, there are a lot of influential informal rules; the learning alliance provides a means of harnessing the informal system to bring about change within a system. Studies show that a non-bureaucratic structure is favourable to collective action due to a reduction in transaction costs.

Institutionalisation of participation in the learning alliance process; requires an understanding of the goals and what each stakeholder is expected to contribute. As it was, there was commitment to participate in meetings though this had not been formalised and once invitation letters were sent on time and there was no sector event which was clashing, a meeting would be well patronised by members who had been invited (the national learning alliance brokering meetings by coming up with a sector calendar which is shared; also publicising events through the platform ensured that different meetings did not clash).

Another barrier noted is the inadequate coordination among stakeholders and fragmentation of actions. For example, within the formal rules, if the structure of the water company is considered, the water company has its own planning unit that plans for water supply infrastructure. This is separate from planning unit of the assembly which has planning functions for waste water. Unless there is joint planning then there is often a disjoint between water supply and waste management which is not necessarily demonstrable of a best practice in integrating urban water management. There is a need for an overarching structure that plans water supply, stormwater management and waste water management and then the implementing agencies can go ahead and implement while collaborating with each other.

Based on the description of institutions we note the following; formal institutions, informal institutions and institutions that rest on the boundary which provide a mix of formal and informal institutions. We also note from the scoping exercise varying levels of interest vis; individual interest and organisational interest. These will be explored in subsequent chapters where the outcomes of the learning alliance in relation to the institutional context are examined.

Some of the governance issues identified during the analysis of institutions included the following- limited cooperation and collaboration among stakeholders, in addition to

resource constraints. On-going reforms also mean that the sector is constantly changing and readapting itself. Gonzalez and Healey (2005) point out that changes in governance follow either a path dependent or an unexpected trajectory. What does this existing structure mean for innovation capacity within the water sector in both cities? Chapter 7 explores the outcomes that were experienced by the different learning alliances.

A gap noted in the innovation capacity of both places is the limited role of intermediaries such as learning alliances (see sections 5.2.4 and 5.3.3). The intermediary domain as discussed in section 2.3.4.1 is made up of organisations or groups that facilitate the flow of knowledge and information from one part of the innovation domain to other parts. These companies could also be private companies that broker access for knowledge. It is however, noted that the information flow for mostly private companies or consulting firms will come at a cost and a lot of information remains withheld. The free flow of information to all stakeholders through an informal intermediary such as the learning alliance becomes significant in this institutional framework for innovations.

From the above, it is noted that while a project may desire an institution to work at a particular level, (for example, city level; see figure 2.6 in section 2.3.4.1), the local institutional structure may present challenges that have be dealt with beyond that level (for example, moving up to national level) and thus the project (LA) has to adapt itself to work in the local setting or within local structures. These different levels of decision making provide potential cross sectoral and cross city linkages, breaking barriers across both horizontal and vertical lines. The emerging learning alliance in Accra was therefore not just one platform at the city level, but a platform with mixed players both at the national and city level (as compared with Birmingham which had mainly players at the city level).

5.4.2 Conclusions on institutional context

The innovation framework which identifies actors within an innovation set up indicates the need for an intermediary domain which works to share knowledge across the different domains and also provides a space for developing networks among actors within an innovation system. The institutional framework assessed indicated a gap where intermediary institutions are concerned. While in both cities there are policies that require interaction among the different stakeholders, in reality such a group is missing from the innovation framework in both cities. The learning alliance activities in this instance serve two purposes; as an area for learning and also a space through which governance processes

occur. Exploring the learning alliance in this manner also identifies a lot of parallels between learning and governance and as noted, the common connection of stakeholder engagement and interaction underlies the two processes. This brings us back to the framework presented earlier in setting the context for the study (figure 2.13 in section 2.3.8); The activities of the learning alliance which mainly involve interaction and collaboration is expected to lead to networking and information sharing which are conditions for learning. At the same time, the interactions provide a platform for empowering stakeholders to actively participate leading to improvements in governance and power relations. The next chapters will therefore explore the activities of a learning alliance as an intermediary for innovation and learning (chapter 6) and the extent to which the activities of the learning alliance contribute to innovation and learning. The outcomes of the learning alliance are further discussed in chapter 7.

Next in the study, Chapter 6 explores in detail the activities of the learning alliance and its contribution to learning.

6 A Case Study on Learning within a Multi-stakeholder platform in Accra and Birmingham

6.1 Introduction

The review of literature presented in Chapter 2 showed that social learning is key in addressing complexity in resource management in an arena where different stakeholders come into play (Blackmore, 2007). UWM has the highest chance of success, when based on a learning process in which all water sector institutions are taking part (SWITCH, 2007). This chapter will dwell on learning that occurred within the learning alliance by tracing cases from individual level to organizational level. First, the chapter explores the tools used to promote learning and discusses the observable learning outcomes, how the learning occurred among stakeholders and what motivated stakeholders to learn. The chapter concludes with a summary of the findings and implications for practice. By exploring how learning occurred within the LA and the outcomes of the learning that occurred, this chapter provides responses for the research questions raised in Research Sub-Question 2 (section 2.4.7) which aims to understand how learning occurs and the extent to which it goes beyond the LA platform within a city to influence change and innovation in IUWM. The issues under this research sub-question will be discussed in this chapter are:

- 2a. What are the factors that support or prevent learning within a city LA?
- 2b. What are the processes through which multi-stakeholder platforms/learning alliances can contribute to innovation in (more sustainable/integrated) urban water management? (e.g. strategic planning, demonstrations, collaborative research, collaborative implementation, joint studies)

The sources of data used for this chapter are;

- Responses from stakeholders about learning and their experiences (all references made to the names of stakeholders in this chapter are anonymised and not actual names of stakeholders).
- Observations made by the researcher during the learning alliance process

6.2 Processes through which learning occurs

This section identifies and explores how the tools adopted by the learning alliance are used to achieve learning. The processes through which learning occurs are discussed earlier in

Chapter 2, section 2.3.3. The contribution of a number of tools used by the learning alliance process is explored in this chapter. The tools that will be described here are:

- Learning Alliance Meetings (section 6.3.1 – detailed description in Appendix 3a)
- Training Workshops (section 6.3.2 – detailed description in Appendix 3b)
- Resource Infrastructure, demand and access studies RIDA (section 6.3.3)
- On site Demonstration and field experiments (section 6.3.4)

6.3 Initiation of Learning Alliance Process

The general concept of Learning Alliances applied within the project was built around the central proposition that “only an integrated approach to the process of innovation, bringing together all stakeholders (practitioners, researchers, policy makers, activists), can address the range of failings” (SWITCH Background Paper). In view of this, from the onset of the project, stakeholders were identified in Accra as part of what was known as the initial scoping exercise (4.3.1). City stakeholders in urban water management were profiled through this exercise that was undertaken by SWITCH project partners. These stakeholder groups would be referred to in subsequent discussions about learning meetings and stakeholder learning experiences. The objectives of the initial scoping were to identify key organisations and initiatives related to urban water management in each demonstration city, the main problems faced by the city, and potential champions for SWITCH activities on integrated urban water management. In the words of one of the external researchers,

“..... to learn about the city and what the [city] LAs would be about. We went to Accra; we must have spent a week and a large time was spent visiting people who would later become the LA members. [These are] people from the Water Company, HSD, and AMA - we went to see the mayor. We made an inventory of challenges that people faced with water management in the city”.

The main challenges highlighted by the initial scoping related to inadequate water supply services and the lack of sanitation services within the city. It also highlighted institutional challenges such as lack of access to financing and weaknesses in the enforcement of policy and regulations. These issues set the context for the process of stakeholder engagement in Accra. Stakeholders engaged in the learning alliance are presented in table 4.2 (section 4.4.1) and table 5.1. The stakeholders profiled included researchers (national and international), city authorities, city planners, water operators, regulatory agencies, NGOs and community groups. Findings from the initial scoping exercise were later complemented by a full stakeholder analysis and institutional mapping exercises. When

representatives of stakeholder organisations were approached during the initial consultations, they indicated their interest in the SWITCH project and the learning alliances. Some paraphrased stakeholder responses are presented below:

- A project like SWITCH could give a boost to the Knowledge Management (KM) Task Force. The KM Task Force could be the basis of a LA (City stakeholder working with an International NGO in Water and Sanitation).
- Suggest linking SWITCH with UN Habitat program on Urban catchment degradation (being done by WRC as a component of Water for Africa Cities program (WaterAid) There are already several platforms operating (city stakeholder, regulatory agency in water resources management)
- There should be a platform to share and spread information to improve the situation in Accra (Representative from the city waste management department).
- Have [had] organised groups in past but everyone wants to follow their own road. (representative from city health department)
- Be careful of the funding challenge. People are likely to start off very enthusiastically, but this will go down if funding is not coming... Accra might be a too challenging city to start with (city stakeholder, Development Partners (DP))
- Knowledge and information management needs to be addressed. Better understanding between organisations is necessary. Strongly supports learning alliance (City Stakeholder, Government Representative)

(source: Initial scoping report)

From their responses, stakeholders could be characterised as those showing enthusiasm and those showing cautious optimism or some scepticism about the project. Stakeholders were accepting of the potential role of the learning alliance as a coordinating platform and as a source of information. There is, however, a caution concerning the fact that collaboration and coordination was a challenge because stakeholders had the tendency to continue with the status quo. It was also noted that there were existing platforms that appeared to have 'lost some steam'. One explanation given was the challenge of funding. The major challenge described by all stakeholders interviewed was the challenge of funding and the potential effect on the learning alliance processes. It was noted by stakeholders interviewed that existing challenges with funding could affect the eventual success of the learning alliance. It was clear from the inception that maintaining stakeholder interest was going to be a major factor in the learning alliance process.

6.3.1 Learning Alliance General Meetings

This section explores how LA meetings were linked to knowledge acquisition, knowledge sharing and knowledge utilisation. Five general meetings were held for the learning alliance. Following stakeholder consultations and profiling, the stakeholders were brought together in the Accra learning alliance. Stakeholders were invited to the meetings through stakeholder visitation and consultations followed up with letters of invitation. The meetings provided an opportunity for face-to-face communication with the learning alliance stakeholders. As is typical of organizing meetings in Accra, and for that matter, Ghana, invitation letters were sent to these key institutions. To give the letter of invitation the necessary authority, it was signed by the head of the institution to show its importance. This is quite typical in a society where influence from the top plays an important role in getting support for programmes and activities. The result is that there were many high-level persons including the then Minister of Water Resources, the Director of Water at the Ministry and the Mayor of Accra attending. An extract from the invitation letter sent is presented in appendix 1. Reflecting on the process and the first workshop, one of the SWITCH external researchers who was involved in the initial scoping exercise said, *“This first meeting had mixed feelings [for me]. The meeting was great; there was excellent representation; now that I know more of Accra I think it was excellent representation. There were a lot of people I didn’t know yet; I would say it was a powerful meeting knowing what I know now”*. The intense stakeholder consultations (different from initial scoping) before the workshop played a role in getting stakeholders to be part of the workshop.

While they all indicated their support for the project during the discussions, not all of them followed through to attend the first learning alliance meeting/become part of the learning alliance. This reflects the responses given during the initial scoping exercise where some stakeholders showed keen interest in the project, while others just offered a word of support.

The registered participants list for the first learning alliance meeting indicated that there were representatives from 15 out of 27 (approximately 56%) organisations contacted during the initial scoping. These representatives from the 15 organisations made up 34 of the 56 (approximately 56%) registered participants. The organisations contacted during the initial scoping formed the “core” of LA members and other participants from other organisations joined later on.

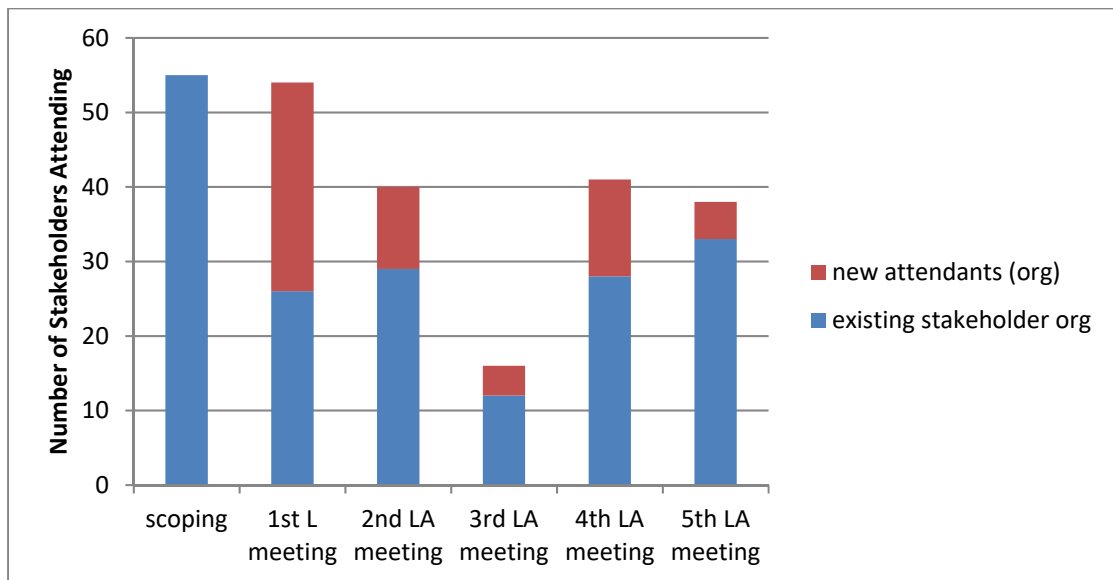


Figure 6-1 Attendance at learning alliance meetings over the project period

At the end of the project, 50% of the initial stakeholders contacted were still part of the learning alliance. The learning alliance maintained contact with about 24 of the 51 stakeholders that were part of the scoping exercise, although two of them were not directly involved in the learning alliance activities. Out of these 24 persons, four of them were strongly involved in the learning alliance and attended almost all the learning alliance meetings and training activities. Beyond these four, there was a very good level of interaction with five of them, a satisfactory or fair interaction of another five and some limited/peripheral involvement of the other ten.

General responses to the initial rounds to invite stakeholders to be part of the learning alliance project expressed the hope this was not just one of the projects that do not come up with anything. Stakeholders made general references to projects and workshops without any concrete actions. As a facilitator working on the project I sometimes found myself trying to explain the difference between how the learning alliance had been conceptualised and other projects that they were used to. Based on their experiences from prior participatory approach type of projects, stakeholders expected that at the initial meeting, the coordinators of the LA/SWITCH Partners as initiators of the meeting would tell them what to do, or what project (demonstration) was to be implemented, but we had to explain that it was a learning platform. The concept of a learning platform, while not very different from other multi-stakeholder platforms they had been involved in, was different in that instead of coming to say to them ‘this is our project and this is what we want to do’, the

idea was to work with them to come up with a vision and develop strategies to achieve the vision which was expected to be guided by research.

However, the departure from this initial concept was that while stakeholders were still working on developing a vision, the research areas that were to support the development of strategies *had already been defined*. In some cases, facilitation was required to align the interests of stakeholders to that of the researchers. At the end when stakeholders had understood the process, their worry was the fact that ideas and plans may not be implemented.

“We came together and enumerated the problems and gave the solutions. What steps do we need to take after the project is ended? We have identified the problems and the steps taken to realize; must we end there? If you ask me I will say no; the next step is having identified and found solutions, we have to tackle the solutions. ... What steps do we take to realize them? Projects should be ways of solving the problems. It should not be workshop on identifying the problems” (CI, Stakeholder from Research Institution)

The statement is indicative of the fact that the stakeholder saw the learning alliance as a means to an end but not an end in itself. He hoped that the ideas and strategic directions developed within the alliance would continue. This shows the confidence he had in the process he had been engaged in and the belief that that process was going to yield something more than outputs from a meeting. The desire of the stakeholder for lessons from the learning alliance to go beyond the project is an indication of a learning process where a stakeholder now situates his knowledge gained in solving problems beyond the alliance. The ability of learning alliance to have an influence in the wider water sector is discussed in detail in chapter 7.

At meetings, engagement of participants was through presentations, question and answer, group work and discussions. In a follow up interview, this is what a stakeholder had to say about the level of interaction:

“It helps both for gaining new knowledge when it comes to innovations; I am not sure about understanding concepts because the time we spend is not enough”. (Linda, name anonymised)

This comment indicates that while meetings offered a good level of interaction for stakeholders to be introduced to issues, the time was considered short for reaching understanding of new concepts. This comment is supported by remarks made in most meetings where stakeholders indicated that the time for discussions was short. Generally, across all meetings, stakeholders indicated that they were satisfied with their level of

involvement in the meetings, remarking that they found the level of interactions and discussions to be good. Following up with the issue of timing and frequency of meetings, however this is what one stakeholder had to say.

“Times for meetings are enough; we should take it as it is. I think LAs should link up with the universities because they have to do the detailed training on concepts. There could be some training on concepts that have been discussed”

This statement suggests that while the stakeholder recognises the need for more time to fully understand issues at meetings, she is limited by time. She however sees the value of a training workshop in helping to gain further insights on topics. The link up with universities suggests confidence in information from the university and probably the expectation of a certificate which was similar to some expectations of other stakeholders. This comment also ties in with the need for training which was identified and demanded by stakeholders, leading to a series of training meetings as part of the workpackage activities. These meetings provided the opportunity for stakeholders to have further insight into some topics identified during general LA meetings. The use of training workshops as part of the learning process is discussed in the next section 5.2.2.

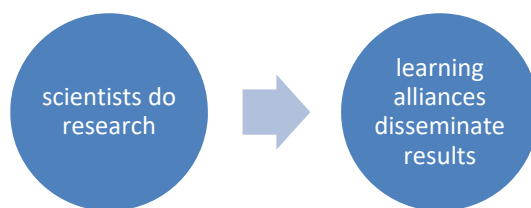


Figure 6-2 Conventional Research approach for engaging stakeholders: Scientists conduct independent research and share results at the end

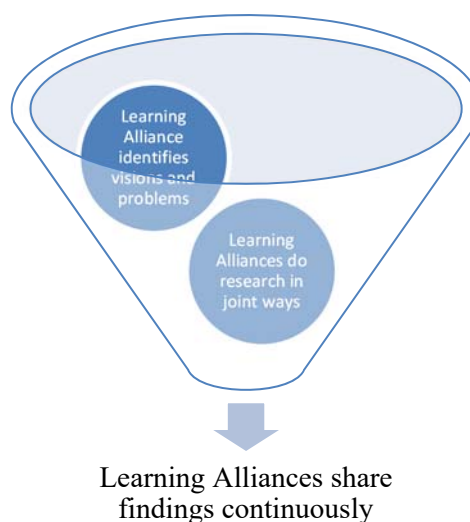


Figure 6-3 Action Research Process of engaging stakeholders:

Figures 6. 2 and 6.3 show different means of engaging stakeholders in conventional research (where scientists conduct independent research without much recourse to stakeholders and share results at the end) in contrast to using an action research process (where the research scientist are part of the learning alliance and work together with other stakeholders to do research while continuously sharing research findings). In an action research process, the stakeholders are able to contribute in shaping the directions of the research. This also leads to shared ownership of research results and facilitates the uptake of results by the various stakeholders. The learning alliance process allowed researchers to continuously engage stakeholders during research instead of waiting till the end of the project before communicating project results.

6.3.2 Learning Alliance Training Workshops

This section explores how training workshops helped with knowledge acquisition, knowledge sharing and knowledge utilisation. The training workshops were more specific, addressing workpackage research directly and did not require all learning alliance members to attend. The training workshops were designed for the different working groups that were formed at the start of the learning alliance process.

There were three types of workpackage training workshops, (1) training in Natural Systems, (2) training in the use of waste water for urban agriculture and livelihoods and (3) training in Social Inclusion for water governance. The demonstration provided an avenue for the use of knowledge generated from research in Urban Agriculture and Natural systems. The demonstration is discussed in section 5.2.4.

Details of the Workshops and processes are given in appendix 3b. The following table (6.1) gives a summary of the training activities and how they fit into the conceptual framework (subframe 3 on analysis of learning) and progression of stakeholder interactions described in figure 2.10 (see section 2.3.8 on the conceptual framework (figure 2.9)).

Table 6-1 Contribution of LA training workshops to the learning process

Meeting	Agenda/Activity	Output in relation to learning	Level of Stakeholder interactions
1 st UA Training Workshop (May 2007)	Prioritise research areas for urban agriculture	Knowledge generation and knowledge sharing	Joint discussion, initiation of collaborative research

Meeting	Agenda/Activity	Output in relation to learning	Level of Stakeholder interactions
2 nd UA Training Workshop (November 2007)	Identifying scope of research for demo, identifying the sites for demo and technologies to use	Knowledge generation and knowledge sharing	Work together planning
1 st Natural Systems Training Workshop (April 2007)	Identify areas for research into waste water systems in Accra	Knowledge generation, knowledge sharing	Joint discussion, initiation of collaborative research
2 nd Natural Systems Training Workshop (September 2007)	Training on waste water treatment	Knowledge sharing	Joint discussion
3 rd Natural Systems Training Workshop (July 2010)	Training on Faecal Sludge management	Knowledge sharing	Joint discussion

From the summary table above, it can be noted that the training workshops mainly served as an avenue for knowledge sharing.

6.3.3 Assessment of Resource Infrastructure Demand Access (RIDA)

The acronym RIDA stands for **R**esource, **I**nfrastructure, **D**emand and **A**ccess. It is a framework that supports the assessment of available resources, infrastructure, demand and access for water. The RIDA framework is useful for undertaking a situational analysis on the existing conditions for water management. It was used in the EMPOWERS Project²³ (section 4.4). As a facilitator, I came across this tool during the initial training of learning alliance facilitators and thought it might be useful for presenting data to the Accra Learning Alliance. During the visioning workshop, it was briefly mentioned as one of the tools that could be used to support the planning process, but it was not until after the 3rd learning alliance meeting that the learning alliance coordinating team in Accra made use of it. This is because the ToR that would guide the work needed to be drafted together with the learning alliance members.

²³ EMPOWERS stands for Euro-Med Participatory Water Resources Scenarios. It is a project that was based in Egypt, Jordan, the West Bank/Gaza and used a learning alliance model for integrated water management in the Middle East. A similar approach of using learning alliance for water governance was applied in SWITCH

The Resource Infrastructure, Demand and Access (RIDA) study was influenced largely by the Visioning and Scenario Building Process. Based on the visioning and scenario planning exercise, it was realised that more information was needed to develop scenarios as well as identify strategic plans. The Visioning and Scenario planning meeting (2nd LA workshop) influenced the decision of the facilitating team to develop an additional objective for the city. At the end of 2007, with the visioning and scenario planning process on-going, a new objective was added to the Accra Learning Alliance Objectives at the annual learning and sharing meeting for learning alliances (held in Ghana in December 2007). This additional objective was to meet the need to fill gaps in data as well deal with the inconsistencies in data available. The additional objective and the micro-scenarios that would assist to track the progress of achieving the objective were given as follows:

Accra – additional objective A1: that we know what is going on in the IUWM sector in Accra

Indicators are the availability of information on issues of IUWM, [the] sharing [of information] among learning alliance members and their active participation in keeping accessible information updated.

To track the above-mentioned objective for the Accra learning alliance, a set of five (5) micro-scenarios were developed to track the progress on how the learning alliance was used as a process for obtaining information in IUWM in Accra. These five (5) micro-scenarios were allocated scores from the least desirable (score 0) to the most desirable (score 100) at equal intervals. The description of the micro-scenarios and the corresponding scores that were used to monitor the changes in the Accra learning alliance are provided in table 6.3 below.

Table 6-2 Micro-Scenarios for monitoring Accra Objective A1

Scenarios for objective A1	Score
• There is no information available on IUWM issues in Accra for LA members	0
• There is limited and outdated information available to LA members	25
• There is significant up-to-date information on issues of IUWM in Accra available to LA members	50 benchmark
• Data and information is shared regularly with LA members (including researchers and implementing organizations) and LA members contribute to the information database	75
• Data and information provided is used by LA members in their work and LA members give regular feedback to improve the information database	100

Prior to the inception of the RIDA study, an informational CD-ROM known as the Accra Starter Kit had been developed, led by IWMI, one of the SWITCH partners. The Accra Starter Kit gave consolidated information about the status of water resources and sanitation as well as some initial research on urban agriculture in Accra and the initial SWITCH work that had been done. The starter kit was distributed to stakeholders at one of the learning meetings and it received a positive response from stakeholders. As a facilitator, I observed that stakeholders were always happy with information offered to them. During the evaluation of the workshop, stakeholders indicated that one of the materials they found most useful was the Accra Starter Kit. In one of the interviews about the LA process, this is what Jane (anonymised, see section 3.4), one of the consultants working with development partners had to say in response to what information from meetings are used for:

“The CD on Accra [reference to starter kit]; these things are difficult to come by. Getting information readily available that people can access easily; in a language that people understand. Maybe [it is] because if you are doing consultancies you need basic information; if you are in our position you need those information because at meetings you are supposed to provide people with evidence. If you have academic interest; it provides information you can think about for future research”

Having worked as a consultant she could relate to the information provided. She also had academic interests and expressed interest in pursuing further education hence her ability to relate the value of the information across different stakeholder groups. The first part of her statement confirms the calls by stakeholders for relevant information for making decisions. It also supports the additional objective of making information on IUWM available for the learning alliance process since information that helped stakeholders to make decisions in their work was not readily available. Hence, a study such as RIDA had some value for stakeholders. The phrase about presentation *“in a language that people understand”* will further be discussed in the section that talks about engagement within the learning alliance and the role language played.

To support and provide feedback on the RIDA study, a working group was formed during the 3rd Learning Alliance Meeting. Apart from the LA research and coordinating team, the working group had eight representatives from the different stakeholder groups (including three representatives from the Accra Metropolitan Assembly – planning unit, waste management department and sewerage unit). There were three representatives from AMA because the stakeholders deemed it important to have the city authorities play a significant

role in the process, given that they were expected to make use of most of the information generated from the exercise. Other representatives were from WSMP (representing the Ministry of Water Resources), IWMI, PLAN/CONIWAS (representing civil society groups), WRC (representing regulatory agency), ILGS (local government studies). Terms of Reference (ToR) were agreed on and finalised together with stakeholders after the meeting. Members of the working group were then asked to send their comments on the ToR. A copy of the ToR document is shown in appendix 3. The Learning Alliance coordinating group was to start with the data collection and then feedback regularly to the working group that had been set. The RIDA was also supposed to provide input for the work of the strategic planning working group. The activities that were undertaken as part of the RIDA were:

- Collection of information on water resources, water supply infrastructure, sanitation infrastructure, draining infrastructure, demand for water related service and access of people to these services
 - Online search on relevant information
 - Analysis of information from the Accra starter kit
 - Analysis of information from AVRL database
 - Collection and analysis of other secondary information
- Analysis of the data from different sources and making it available in an excel sheet and / or GIS
(**source RIDA ToR; see appendix 4 on RIDA Protocol**)

When the RIDA study started, there was a lot of information about water supply and limited information about waste water. To complement information obtained from reports and online searches, the facilitator (RIDA team) contacted members of the LA through mail/phone/face to face consultations to obtain further information. This information was then analysed and compiled over a period of about 8 months. It was presented back to the learning alliance members by the 4th LA meeting for their responses and feedback. The draft report was also circulated among key stakeholders for their comments. This process was to ensure the validation of the information presented in the document.

6.3.4 Action Research and Demonstration

Two propositions from the stakeholders during the initial scoping were the need for demonstrations and focus to maintain the interest of stakeholders. Suggestions of two stakeholders are paraphrased as follows:

- It would be important for the LA to have a thematic focus or a specific project to focus around. This is something the task force is lacking. A problem that the task force is facing is the lack of focus (like one, or a number of projects to focus on) and the lack of a stable funding stream. (Coordinator of existing platform)
- Recommend picking a couple of demonstration projects to weave around (for example Odaw River and the conflicting interest in water use as a case study for all SWITCH themes.) (University Researcher in Water, Accra)

From experience, these stakeholders noted the need for demonstrations to provide a focus for the learning alliance. This section describes the action learning process of waste water recycling for urban agriculture which is one of the activities of the Accra learning alliance. The idea of using action research in SWITCH was to work with the stakeholders to develop practical solutions to problems identified in the learning alliance. Having urban agriculture in SWITCH provided an opportunity to change perceptions about urban agriculture and the use of waste water for agriculture as well as improve the quality of water for use by farmers.

Urban agriculture contributes significantly to providing food for more than 250,000 urban dwellers in Ghana (IWMI/RUAF, 2007). In recent times, urban agriculture has mainly provided vegetables for consumption by inhabitants of the cities, including Accra. Agricultural water consumption is not particularly considered in downstream end urban water management; and there is no restriction on how much water can be taken for agriculture from the Volta lake, one of Accra's main water sources, although there is some limit on the other source, the Densu river²⁴). These sources are far removed from the city and water use for urban agriculture is not formally recognised as part of the formal water supply system. The dominant usage of water resources beyond water supply is for hydro-power generation and irrigation; there are some irrigation systems, but these are mainly outside the city. In addition, water supply from the water company is not regular and there are restrictions on its use for watering plants; sometimes there is no access to treated water. Urban agriculture farmers have to rely mainly on waste water going through the drains to support their farming; this is cheaper than using treated water from the water company. In current IUWM thinking, the use of waste water for agriculture represents an advantage since the crops can make use of the nutrients in waste water for a better yield. The use of

²⁴ Water supply to Accra is based on 2 sources; the Volta Lake (Eastern Part of Accra) and the Densu River (Western part of Accra)

waste water however has some negative social perceptions in the city of Accra with city dwellers having health concerns about the contamination of vegetables produced with waste water. The demonstration that the learning alliance sought to do with research and the stakeholders therefore aimed to show how to improve the quality of products from the farms. The area for urban agriculture has significantly reduced over the years and the number of people involved in urban agriculture are very limited; a negligible proportion of the population; most of those involved in urban agriculture are migrant farmers from regions other than Accra, with most of them having a low level of education.

Generally, agriculture is of importance in the country but urban agriculture, even though it makes a good contribution, is not clearly delineated in the formal scheme of things; RUA had been working prior to SWITCH to make UA more recognised. Recycling and re-use is one of the elements articulated in the vision for city. Two on-farm experiments and demonstrations were undertaken as part of the research work. The first demonstration was the treatment of waste water to improve on the quality of water being used by farmers. The second demonstration was on recycling of nutrients through the use of urine by farmers. Implementing the demonstration followed a participatory process where farmers and other groups of interest helped to shape the direction of the research.

- Two training workshops (discussed in section 5.2.2)
- Social inclusion workshop
- On-farm meetings
- Social inclusion / demo baseline survey
- Design and implementation of on-farm activities
- Farmers responses to on farm demonstrations

When the learning alliance was formally launched in 2007, urban agriculture was introduced to stakeholders. In the first learning alliance meeting, it was considered as one of the options of dealing with waste water management. Subsequently two training workshops were designed to deal with the design and implementation of the demos. The first training workshop was held in May 2007 (details of these training workshops have been discussed in section 5.2.2.1). Following the initial workshops, subsequent training workshops and on-farm interactions were held to refine the research and demonstration (together with the stakeholder groups).

While the ideas for most demos were conceptualized²⁵ before the learning alliance and thus stakeholders did not have much of a say in the type of demo to be done, they took an active part in the design of the demos. The priorities of stakeholders were identified through the scoping exercise and initial meetings of SWITCH. For urban agriculture, specific work-package meetings and training workshops were held. Institutional assessment done during scoping exercise and stakeholder analysis helped to give the picture of the prevailing institutional context. The social institutions were also considered through participatory social inclusion studies with farmers. On-farm meetings were also held with farmers to understand their priorities.



Figure 6-4 Researchers and LA members interacting with farmers at demo site

As part of the process, different issues regarding the demo were identified (e.g. drain and stream water treatment, connected ponds vs separate pond treatment). Specific objectives were defined for each issue and activities that would lead to the demo were defined. These activities included further studies in social inclusion and evaluation of existing practices to understand indigenous practices of farmers; based on this, further refinement of the demonstration was undertaken and then the second stage involved actually building the low cost on-farm treatment system and evaluating the ability to reduce health risks.

²⁵ The specific demo envisaged in the original SWITCH Description of works (DOW, pp 95-96) was to test wastewater risk reduction methods to ensure livelihoods of farmers and other beneficiaries in the food supply chain while safe guarding public health concerns and the exploration of options for recycling of human waste for agriculture. SWITCH DOW 018530-2 3rd of February 2006

Following this step, it was expected that public education would be done. The final output expected was the adoption of the demo by farmers. The results of the demonstration are discussed later in this section.

Being the end-users of the results of the demo, farmers played a central role; there was collaboration with other stakeholders who provided their research experience; labs and technical knowhow to support the researchers.

Even though several consultations and discussions had been held with the farmer groups before the demonstration was actually done; the farmer who was involved in the urine demonstration had to be compensated in case there was reduction in his expected yield resulting in a reduced profit from selling farm proceeds. The design of the pilot was decided by researchers together with farmers and other stakeholders. Stakeholders supported with pre-baseline activities, site studies and report writing. Involving stakeholders had a number of advantages; they provided data, they also provided facilities for experimentation through their organisations they provided feedback on already existing information regarding the study area to help direct the research. They also supported with the development of baseline instruments for study site. The stakeholder inclusive activities which were part of the training and field studies included:

- Selection of the demo site (development of selection criteria)
- Characterization and evaluation of the study site
- Studies; socio-economic studies
- Defining the demo activity and technical design of the intervention
- Analysis of data
- Implementation of demo (installation of pond and treatment mechanism; worked with farmers)

The contributions from the various stakeholder institutions were formalised through letters of intent signed by the directors or heads of institutions on behalf of their representative on the LA. The involvement of stakeholders in designing the research and demo was expected to make them more predisposed towards accepting results for onward transmission to their respective institutions/organisations. The following table (6.3) gives a list of the stakeholders who were involved in the action research process:

Table 6-3 Stakeholders in Urban agriculture involved in the demonstration process²⁶

Stakeholder	Role	Stakeholder group	Level
Ministry of Food and agriculture	Policy implementation	Key stakeholders	National
Water Research Institute/ University of Ghana, Legon/ other research institutes	Providers of research and other information		National
Environmental Protection Agency (EPA)	Regulator	Active stakeholder group	National
Water Company (GWCL/AVRL)	Operator, service delivery	Secondary stakeholders	City/ national dimension
Farmers	Producers	Primary stakeholders	Community
Consumers	Users of farm products	Primary stakeholders	Community
ETC/RUAF	Support with action research	Passive	International
NRI	Support with research on social inclusion	Passive	International
IWMI	Leading research in urban agriculture	Passive	National/International
KNUST	Support with research on options for waste water treatment technologies	Passive	National

Source: author's own based on stakeholder analysis

These members who were involved in the demonstration had the potential of scaling up activities given their positions within the broader spectrum of stakeholder groupings. It is also significant to note that the farmers who could be considered as marginalised groups played a significant role in the process. The action research process fulfilled one of the Learning Alliance objectives of involving marginalised groups. In an interview with the farmers at the end of the project, they indicated satisfaction at their level of involvement in the action research process as well as the learning alliance. The farmer whose plot was used for the demonstration on use of urine as fertilizer indicated that now people came to

²⁶ Discussed in Chapter 6.

him for information. Further discussions on the outcomes of the action research is discussed in section 7.5.1

6.4 Learning Alliance Activities in Birmingham

The following gives a summary of the learning alliance activities in Birmingham. Prior to the SWITCH project, stakeholders had been involved in another project relating to water management and SWITCH presented an avenue to continue collaboration and the engagement of stakeholders in issues around water management. The following are activities of the SWITCH learning alliance in Birmingham. The initial activities to start up the learning alliance started in 2006 with the commencement of the SWITCH Project through the local SWITCH Partners (University of Birmingham and ARUP, an international engineering consultancy firm). The first city coordinator worked in collaboration with researchers from the University to set up the learning alliance. Based on existing contacts from previous projects, the coordinating team were able to convene representatives of various stakeholder groups from Birmingham. The stakeholder group in the Birmingham LA was relatively small as compared to the Accra. The formal launching of the learning alliance was done in 2007. This process of having the first LA meeting was similar to the process of formally starting up the learning alliance in other SWITCH cities. As in Accra, stakeholders were involved in the identification of research areas and the development of a city vision. The city of Birmingham had a longer-term vision for the city of the future, 30-50 years as compared to that for Accra (20-30) years. The following are the activities undertaken by the Birmingham Learning Alliance.

- visioning and scenario planning
- Training activities
- Process documentation and monitoring
- Dissemination activities.

In Birmingham, the demonstration activity was on green roofs.

In this section, the above-mentioned activities are discussed. Two other activities which were undertaken by the learning alliance are already discussed in the previous chapter (5): i.e. the **Eastside study** which explored the critical infrastructure linked to the regeneration of the city and the **stakeholder analysis and institutional mapping (IM)** which was undertaken by the LA. Apart from the IM, the stakeholder analysis was conducted by the learning alliance facilitator to further look into the interests and challenges of the

stakeholders as well as existing stakeholder relationships. Since the institutional mapping has been discussed in detail in the previous chapter, the results of this activity are not discussed in this section.

6.4.1 Visioning and Scenario Planning Exercise:

The learning alliance served as a platform for planning in both Accra and Birmingham. In Accra, we noted series of LA meetings aimed at developing and improving on the vision for the city. Similarly, in Birmingham, a series of workshops were undertaken by the learning alliance to develop a vision for the city of the Future. The vision for the city of Birmingham is given as follows:

Learning Alliance Vision for Birmingham in 2050

“Birmingham is a green, clean and vibrant, multi-cultural city. We are among the world leaders in terms of water resources, sustainability, environment, economy and development and are seen as an exemplar of Sustainable Integrated Urban Water Management. Overall, Birmingham is an economically prosperous city with a strong environmental stance. Birmingham is trailblazing the water resources within their peer group and is seen as a model for other cities in the UK and abroad.”

Comparing this statement to Accra, we see a marked difference. In Accra, the vision appeared to be more of a list of expectations about solutions to the current challenges of the city while in Birmingham a more futuristic and conceptual approach is adopted. The Birmingham vision also talks about an approach towards Sustainable and Integrated Urban Water Management which is one of the goals of the SWITCH project. In terms of the vision, the Birmingham vision appears to be more aligned to the SWITCH vision for a city of the future. This relates to an earlier comment, referring to the settings within which the visions were developed. In Accra where the water management challenges were high, the city vision was tilted towards solving the initial problems while in Birmingham which had fewer challenges with water and waste water management the vision could look beyond the current challenges into current thinking about the future of water management.

In the first workshop where the vision was developed, the participants worked on three scenarios namely: The ‘old world’, ‘new world’ and ‘sustainable world’ world to compare the different scenarios of water management and identify the ways in which water management could be improved for the city of the future. In Accra, the groups were based on water supply and waste water management to reflect the desire to provide options for

solving the present challenges. In the second workshop in Accra, however the discussion on the vision moved towards more conceptual scenarios related to the city of the future (see section 6.3.1 and Appendix 3a)

The second workshop in Birmingham was a scenario planning workshop and it explored the existing visions in Birmingham and England that are related generally to water management. This is because of the recognition by stakeholders that to ensure sustainability of the process, there was the need to embed the LA vision into the existing visions of the city to make it easily acceptable and also encourage its uptake by the city authorities. As was done in Accra, the stakeholders ranked the issues which they thought were most important with regard to water management in their city. The difference in the methodology (between Accra and Birmingham) when it came to ranking issues is that Accra City stakeholders used the process of a plenary discussion in a workshop, while in Birmingham the stakeholders did the ranking of the key issues through a questionnaire that was administered by the facilitator and researchers. The second workshop on scenario planning was thus used to review the stakeholder responses to the question and agree in plenary on which ones were most important. Based on the responses to the questionnaire, the stakeholders in Birmingham came up with scenarios for the city of the future.

The scenarios presented by the stakeholders showed different views of the city of the future where in one scenario the City is seen as a ‘flourishing city that has embraced innovative water and energy management challenges’ while on the other hand the city is seen as having challenges dealing with issues around energy, population and climate change. Parallels could be drawn with the most likely, medium, and best scenarios that were drawn in the city of Accra. The city water tool (described in the next section) was used to run the scenarios identified by the learning alliance members in Birmingham. This use of the city tool to facilitate the development of scenarios, generated a lot of interest from the stakeholders and later, as is noted, one of the young researchers found that engaging with stakeholders through the city water tool was an avenue for getting the information that was needed from one of the key stakeholder groups. The process of scenario planning in both cities showed the learning alliance providing a space for joint planning within both cities. While Accra used the RIDA as the material tool around which data was gathered, the City of Birmingham used the City Water Tool. The city water tool and city water training workshops are described in the next section

6.4.2 City Water Workshops (Demonstration)

The City Water Tool was developed as a tool for providing decision support systems in urban water management. As part of developing the city water tool as a demo, two major training workshops were held in 2009 to provide stakeholders with information and understanding of the tool. The initial workshop was just to introduce the stakeholders to the tool and its possible range of uses. By the 2nd workshop with work advanced on the development of the tool, the stakeholders developed a better appreciation of the tool. This provided a basis for information to be obtained from one of the key stakeholders in the learning alliance. For the researchers, they considered this a breakthrough; to be able to get information from the stakeholder when they understood the use of the city water tool. Based on information obtained, the city water tools were used to undertake an assessment of impact of future scenarios on management in the city. A city water model was developed for Accra by researchers from Birmingham relating to flood risk management options, but there was not much opportunity to share widely with stakeholders.

6.4.3 Training Workshop on sustainable urban drainage (SUDS)

This research was undertaken by Middlesex University and University of Abertay Dundee. Two training workshops were held as part of the research and demonstration activities around the research on sustainable urban drainage. A training workshop was run by the University of Abertay Dundee in which learning alliance members from Accra and Birmingham enrolled. In addition, a training workshop was organised in 2008 in Birmingham and it was well attended by members of the learning alliance. There was participation from external researchers working in a similar area from Hamburg. This presented an opportunity for ‘global’ sharing of experiences and allowed the learning alliance members to have an understanding of how some of the best management options were being applied in another SWITCH City. This is one activity that members of the learning alliance paid to attend. Similarly, this is noted in two of the natural systems training workshops in Accra where members paid a token to support the costs of organisations. This underscores the fact that when stakeholders value the cost of information there is an opportunity or chance for them (stakeholders) to support the costs of delivering the training. So while stakeholders may not have been able or prepared to pay for the costs of facilitating the learning alliance, there were opportunities for stakeholders to pay for training.

6.5 Learning Experiences of Stakeholders

The previous sections have described some of the learning tools used in the learning alliance process. This section goes beyond the tools to explore individual learning experiences within the learning alliance. In this respect, the measure of stakeholder experiences and perceptions will provide an indication of the kinds of changes that have occurred. Within the short time frame and limited resources, the change in perceptions of stakeholders can be considered, with reference to the theories of reasoned action and planned behaviour (section 2.3.3.2), as evidence of learning that leads to behaviour change and attitudinal change.

Changes were not observed in every stakeholder and where there were changes they were not sudden, drastic, extreme or very clear. Statements made by the stakeholders during the interview were analysed to determine any changes in perceptions and knowledge (either overt or latent). The SWITCH project as noted in Chapter 4 had the following key players: the SWITCH Consortium Members (these are the Project managers, researchers and scientists). The learning alliance was also made up of Researchers (City based and external), Learning Alliance Managers (Coordinators and/or facilitators – the coordinator is a researcher who is expected to provide a link between the research and the learning alliance working together with the facilitator and other researchers. The facilitator is expected to support the coordinator and manages the learning alliance processes, including facilitating meetings, engaging stakeholders and process documentation); and city level stakeholders with interests in IUWM relating to the thematic area for the city (these stakeholders, described earlier in chapter 4, can be referred to as research users).

These stakeholders can be described as being: either enthusiastic (i.e. being relatively very supportive promoters for the learning alliance; people who have been highly engaged in the process and have a relatively higher level of participation) or they can be described as being relatively sceptical (i.e. stakeholders who are to some extent not yet fully convinced about what SWITCH can do to support the city, and quite sceptical about whether the learning alliance is going to last or lead to real change).

This description of stakeholders provides the categorisation that was used for selecting stakeholders for the city assessment. Table 6.4 was developed as part of the SWITCH city assessment and provides a framework for categorising the stakeholders in order to get a balance of stakeholder views.

However, for this study, a slight modification was made to the categorisation so that instead of having the categories based on level of involvement and interest, the categorisation is based only on level of (interest and enthusiasm) given that most of the stakeholders were already involved in the LA to a large extent. In this table, the research providers, facilitator and research managers, are part of the SWITCH consortium; at the same time there are some cases (such as in Accra) where researchers had overlapping roles as research managers or coordinators. The term ‘research users’ refers mainly to the group of stakeholders in the city who are not part of the SWITCH consortium (numbers 3 and 6 in the table 6.4).

Table 6-4 Categories of stakeholders in learning alliance based on SWITCH categorisation

SWITCH Stakeholders		Categories		
		SWITCH Researchers ('scientists')	Facilitators and research managers	Research users
Level of interest and enthusiasm	Higher level (Enthusiastic) ⁴	Category 1	Category 2	Category 3
	Lower level (Sceptical) ⁵	Category 4	Category 5	Category 6

Based on my own reflective journals, even though I had a relatively high level of involvement and interest in the learning alliance, I would consider myself as a sceptical stakeholder at the start of the learning alliance (see Appendix 3e).

As noted in chapter 3, stakeholder interviews covered as many stakeholder groups as possible including city based researchers and their EU-based research partners, city planners, utility operators (Water Company), regulators, consultants, development partners and civil society. The selected cases of stakeholder experiences described in this section will cover these stakeholders in Accra and Birmingham.

6.5.1 Stakeholders from Accra

The learning experiences of five stakeholders in the learning alliance are described in detail. Three of them are researchers (one enthusiastic and two relatively sceptical) who are part of the SWITCH consortium and the others are a stakeholder working for one of the regulatory agencies and another working for one of the development partners. Their experiences are compared to other stakeholders.

6.5.1.1 Stakeholder 1 Research User (Category 3)

“Felicity” is a principal programme officer working with one of the regulatory agencies. Her position is equivalent to a deputy director and she has been working with her current organisation for close to 11 years. Prior to this, she worked briefly for a research institution. Her background is in agriculture and environmental management. Her involvement in SWITCH started when she was asked to represent her organisation when they were invited to be a part of the learning alliance.

“I got into it when a letter was written to [Regulator]; I was invited to first meeting at Novotel; I wrote a report on it”.

While writing a report on a workshop attended is not a strictly adhered to rule for most organisations, it is noted from her statement that she wrote a report for her organisation after the first meeting. Does she perceive herself as a learning alliance member? From her response, she does and added it to her CV for her promotional interview within her organisation. It is significant to note that she recognised LA participation as part of her work-related activities, and this stakeholder was present at all the learning alliance meetings she was invited to. Felicity describes her motivation for attending LA meetings:

“To know more about the use of waste water especially in Ghana where our waste water is channelled in the [environment], [we] don’t have secondary and tertiary treatment. I’m interested in the research. Interested in the water quality component”

Her statement points to her interest in knowledge around a particular topic which she expected to find in the learning alliance. In subsequent comments from stakeholders about motivation for attending learning alliance meetings, interest in the topic being discussed at meeting was noted to have played a key factor in stakeholder motivation. Adding to the point she made about her motivation for attending meetings and without further questioning, she goes on to give her experience in the Learning alliance and the knowledge that she has acquired:

“Now I am able to tell people that the drain water is not polluted as we think. I tell them at workshops or meetings when they [referring to participants of those other workshops] say we are using polluted water for Agriculture; I tell them that it is ok and that I am working with [SWITCH partner] on such a project”

Starting the statement with “now” could refer to a situation that was not there previously. Something that was not in place prior to being part of the project, such as not having adequate information about the quality of water used for urban agriculture. We note that

she mentioned that as one of the reasons for attending meetings. Also, in the evaluation form she completed at the end of the 3rd LA meeting on the subject area that she would like to learn more about, she put in the following “*urban wastewater treatment and reuse (urban wastewater management)*”. The change noted here is that being part of the meetings has brought the knowledge of the quality of water used for urban agriculture to the fore. She also makes reference to sharing the information with other persons with the hope of changing their view about the quality of water used in urban agriculture. This is in the context where water quality of drains is considered not to be good and consumers are hesitant to buy vegetables grown with such water²⁷. What is noted from the description of her experience in the LA is first the acquisition of knowledge which upon reflection has become situated in her everyday work. She moves further to situate that knowledge in other discussions around the topic of water quality in other meetings by sharing the knowledge she has acquired from the learning alliance. A third point that can be noted is that she places herself as a partner in the process to say “*I tell them that....I am working **with** [SWITCH partner] on such a project*”. Meaning she sees herself as not just attending meetings but a key part of the process. This will buttress her earlier point of seeing herself as an LA member and adding it to her profile at work.

In the beginning Felicity had interest mainly in waste water. She also had an interest in interacting with different stakeholders in urban water management. Felicity talked about the LA bringing together *relevant stakeholders*. I made a note of this point because in an earlier evaluation of the 3rd LA meeting (in 2008), she indicated the following under suggestions for future workshops:

“Please ensure that key stakeholders or representatives take part to highlight on real issues”

While this response can be attributed to the small number of people who attended the 3rd LA meetings (figure 5.2), there is an underlying indication that Felicity has interest in interacting with other stakeholders working in water management. After the project (2011) when asked about her understanding of the learning alliance process that she had been a part of, this is what she had to say:

“the concept is that it brought together very relevant stakeholders on the use of waste water and for us to think of the management of waste water in the city. Stakeholder composition – not only on waste water we also talked about water supply and storm

²⁷ Studies by IWMI on quality of water used in urban agriculture.

water management. LA gave us access to information that we would not have been privy to e.g. the Water Policy I got it from Esther”

This description of Felicity’s understanding of the learning alliance suggests that for her, the learning alliance was able to bring together key stakeholders for discussion. This is inferred by comparing her understanding of LA in 2011 to her initial idea in 2008 of having different stakeholders to be part of the learning alliance. Being part of the learning alliance also broadened her knowledge on other aspects of urban water management by bringing home the idea of integrated urban water management. Her statement indicates that with her participation in the learning alliance meetings, different dimensions of water have been added; water supply and storm water management. This is reflective of the idea of integrated urban water management described in section 2, which talks about the different aspects of urban water management. She also describes an experience of getting access to information that otherwise she would not have been privy to. While describing her understanding of learning alliance, she continually makes use of the words “us” and “we” and this confirms earlier observations about the fact that she feels that was an integral part of the LA process including the research. The learning alliance also provided her with the opportunity to learn from experts and experiences at the international level.

“For some of the workshops we were looking at how waste water is used in other countries... I still have the information (we were given CDs)”

This brings in the global dimension of the LA. While she may not have travelled to other countries the visits of external researchers to share their work provided an opportunity for LA members to get different perspectives from other countries. Regarding her reference to the CDs, I noted in one of her workshop evaluations, she indicated that the informational CDs were one of the most useful materials given. From the interview and as noted earlier in this section, information obtained from the meetings and workshops are shared with her colleagues at work. There is further sharing with participants in other workshops and meetings. She also uses the information for other activities that she is involved in.

“I use the information to teach. I teach on environmental management at [University X]. From Esther’s presentation I picked the information on wetlands, the pictures I picked for my lectures, the treatment plant and I acknowledge the source”

To give the information to her students indicates an implicit confidence in the quality and reliability of information she has received from the learning alliance. It also implies a reflection on the information that has been received from the learning alliance. While she

made use of information from the meetings, she also provided information to the learning alliance process. Her organization was one of the organisations that had written a letter of commitment to be part of the Urban Agriculture research process. Furthermore, in learning alliance meetings she contributed during discussions and shared information on water quality and environmental regulations with researchers. By the end of the project, Felicity was satisfied with her level of information received and was confident about the legitimacy and quality of the information obtained. She states:

“For me I have been well informed by SWITCH. I can stick out my neck and say the water they are using [for urban agriculture] is not bad”

The result of Felicity’s continuous interactions with researchers and other categories of stakeholders in the learning alliance is that she has obtained knowledge of which she is confident. Here there is a change in her understanding of water quality of drains and how it can be improved. Her understanding has also led to her sharing the information with the hope of changing perceptions of other stakeholders. She is also able to share with confidence. The process of her learning can be described as interaction in learning alliance (receiving information), reflecting and processing on the information, sharing of information. In the learning experience of Felicity, we see the acquisition of three things that are imperative for learning

1. Acquisition of knowledge (information picked up from learning alliance meeting about water quality and processing of information into knowledge)
2. Sharing of knowledge (with stakeholders in meetings, with international participants reporting back to her organisation and contributions at other workshops, information for her students)
3. Use of knowledge (use of knowledge to inform decisions at work, for personal studies and for teaching)

6.5.1.2 Stakeholder 2 Research Manager (category 2)

Esther is a key researcher who was part of the SWITCH project consortium. Her institution was invited to be a part of the SWITCH consortium and by virtue of her position as a researcher in water management, she became part. She describes what attracted her to SWITCH:

“I was told that SWITCH was going to look at an integrated way of managing urban water. It is a research area that I had a lot interest. The idea of having a stakeholder

platform where we can have an input in our research I found it much more interesting than being in the classroom”.

The statement shows an initial excitement about doing something different from what she was used to. The statement makes reference to an area in which she had a lot of interest. This gives an indication of eager anticipation. Ester describes her own experiences in the SWITCH project. What difference did SWITCH make to her research?

“SWITCH provided some funds; - seed fund; prior to that you have to do your own research with your own money. Other than the fact that I could do what I wanted in terms of what the people needed. My research was more focused on what the sector needs; what SWITCH wanted us to do”.

The project for her provided a different way of doing research in which there was an initial view of flexibility to adapt and also deal with the research needs of stakeholders. The initial funding provided for her as a researcher was for her critical. Also, the process of working to have research make an impact was good. Her research work was done closely with other workpackages providing input for the demonstration in the city and interacting with stakeholders in the city. When asked about the difference that SWITCH made to her research, the following response was given:

The key thing was the research and the interaction with other people in the consortium. You learn what others are doing and that was good.

The opportunity to interact with stakeholders and other researchers was significant for her. For her the process provided an opportunity to learn and add to her knowledge. This is further reinforced by her reference to learning from other SWITCH cities.

“[I] was impressed with the work in Poland; their ecological centre; also the German one, the bank filtration and the Brazil project and how they interacted in the community and how they managed their own environment. That is one key thing I have learnt. Community involvement in research is one major achievements of SWITCH. In future if I want to do a research in urban slum, the community must be involved”.

Being part of a larger consortium meant she was privy to examples from other countries on how research in her area had been used to solve problems in water management. Her statement indicates that was able to acquire knowledge in her field of work based on the interactions with other researchers in the SWITCH consortium. Her statement also shows a potential influence on how she will undertake her future research. She recognizes the importance of a participatory approach to research by indicating that the involvement of the community is a must for future research. For a researcher with a purely science and

engineering background it becomes significant that she now sees the need for a greater involvement of the social dimension in research design. This was reiterated in her response to what would be done differently if she had to do her research all over again

“I will always involve the community; my approach will be community based or community led”.

From her experience in the learning alliance process, a number of interactions are observed; interaction with community members and local politicians, interaction with the general stakeholders in Accra and interaction with different researchers at the international (global) level. Regarding interaction with stakeholders in urban water management in the city of Accra, this is what she had to say:

“It has been nice working with all people from different categories. Initially I didn’t want to interact with the politicians. It is nice to see that they behave like human beings. To hear them talk and to know their concerns because initially my focus was only on my research I didn’t care about whoever takes the knowledge but now I am concerned so even with my packaging I will think about it on how to present to my audience. How to package my research findings to the people who matter”.

This statement shows a change in perception as well as a change in research approach. Prior to the learning alliance, the research was purely academic in nature, meeting her institutional requirements. She was also distanced from the potential users of the results of her research. With further interactions within the learning alliance, an understanding was developed on how her research work could potentially affect policy and the city of Accra. Stakeholders also sought advice on issues in her research area thereby making her realise that the target users of her research were wider than she had initially thought. We see here that she moved out of her comfort zone and developed recognition of the need for adequately communicating, or as she put it “packaging” the research for people to understand. Now stakeholders are a key feature in her concerns and reflections on doing research.

She also developed a different perception of the kind of persons that stakeholders were. Prior to her interaction, she saw some stakeholders, particularly politicians as unapproachable and quite a difficult group to share research with or try to convince. But through regular interactions with the local politicians on the platform and through programmes organised by the platform, she came into contact with very high-level politicians (as part of SWITCH Activities in 2008, the project sponsored a presidential debate titled “My Ghana, Clean and Green”).

While there was a lot of learning, there were other challenges for her as a researcher. One of them was managing the expectations from stakeholders as well as project management. Because this work focuses on experiences from the learning alliance, we will explore comments on the expectations of stakeholders.

“It also had to do with expectations; they thought we will do everything for them. The expectation is that we [referring to the water sector in Ghana] are used to donors helping us”

The stakeholder organisation she was referring to like all other stakeholder groups had initial expectations that a project/physical infrastructure will be identified and SWITCH will fund its implementation. The use of the expression ‘we’ shows that she does not take herself out of that group. The researcher revealed that even she had a similar concept initially at the inception of the SWITCH project. Other expectations that were not met had to do with the link between research and the learning alliance. Esther’s initial view as a researcher was that there would have been space for the research within the SWITCH project to expand to respond to research requests from the learning alliance. This however did not materialise given that in practice, it was difficult to redefine and re-assign research areas within the project.

“SWITCH should have made room for that...Faecal Sludge management is important; not that waste water is not important but you have to prioritise. Things you don’t foresee [come up]. For the sector they always talked about solid waste instead of liquid waste. SWITCH did not have any packages [to deal with solid waste management] and did not make a linkage at all. Quality of liquid waste is determined by how people manage solid waste”.

The ability of the research to respond appropriately presented a challenge. While the learning alliance process appeared to have a good level of interaction and feedback for the researcher, the ability to change and adapt her research was challenging. This was due to project rules and regulations and also due to the fact that there were deliverables that had been agreed to, that had to be met. Also having workpackages fixed at the beginning of the project played a contributory role. She however worked closely with external researchers to respond to interests of stakeholders through the use of training workshops (discussed in section 5.2.2). The training needs of stakeholders were dealt with through the main SWITCH Consortium (Global learning alliance) by inviting other researchers to share their research and demonstrations with stakeholders. Researchers from Hamburg and Tel Aviv were invited to share their experiences with stakeholders in Accra. Consortium members from other cities were also invited to give presentations to the Accra Learning

Alliance. Because it responded to stakeholder needs, some stakeholder organisations provided partial support for the organisation of the workshops (section 5.2.2). This shows some innovation on the part of researchers where responding to the needs of stakeholders were done differently.

While not all expectations were met, the interactions and activities of the learning alliance put the researchers in a different light and enabled them to become part of national debates;

“SWITCH had an impact; when we kept bombarding them with issues of sanitation....; we are invited to every national meeting on water and sanitation; before the universities were not invited. They have seen the results of our research and it is bringing in more projects and I’m overwhelmed”.

The impact of the learning alliance was increased collaboration and cooperation between academic institutions and practitioners in the sector and a change in perception of some stakeholders about researchers. Now stakeholders noted that researcher could take a break from their academic work and take part in sector discussions. The researchers were invited to be part of the Ministry of Water Resources Annual Review workshops, and were also invited to be part of the Ghana Water Forum. SWITCH was invited to be part of the organising committee. Another impact of having conversations in integrated urban water management was having it accepted as a theme for the 3rd Ghana Water Forum. In addition, themes on learning and education were made part of all the three fora that have been held since 2009.

In Esther’s involvement in the learning alliance process in Accra, interactions with different groups are noted. She confirms this with her conceptualisation of the learning alliance. She describes a learning alliance as:

“A group of people with a common interest sharing ideas and trying to find a way to solve their problems in a very interactive way. Everyone is respected; all views are respected; irrespective of your background and level of education once you are in the sector you matter... It is a platform but it has to go through processes; it was a new concept and we had to learn on how to interact and how to share ideas”.

Her description of the learning alliance emphasises interaction and sharing of knowledge among stakeholders. Beyond that, there is an indication of cooperation among stakeholders to solve common problems. It also indicates the creation of an open platform without exclusion or marginalisation of stakeholders based on who they were, what they had, or their position in society. She also indicates a learning process where stakeholders had to

“learn to interact”. Her description of a learning alliance based on her experiences can be linked to the project intervention logic described in section 2.3.8 (figure 2.14), moving through a process of joint discussion, through joint work planning, to joint action. These are influenced by exchange of information, collaborative research and learning with a common vision. The expected results include exerting influence at scale. Her involvement with the learning alliance played a significant role. Having close to 30 years of experience as a researcher she is considered by stakeholders as being influential. Other stakeholders interviewed refer to Esther as one of the reasons for attending meetings

“I came because Esther was involved. I have had training under her before and knew that she had the authority over what they were coming to teach. Once her name was there then I said this thing I have to attend.” ***BX about why he came to the LA meeting***

Other references made by stakeholders to her indicate respect for her level of knowledge in her area of specialisation. In response to a question on the quality of research information presented at LA meetings, one stakeholder had this to say:

“I assume that so far as it is Esther and her students it is well done” (***Jack about the quality of information***)

“Someone with convening power; someone who is respected like Esther; once they respect her. That is what you are looking for”. ***PM speaking on Who could be a champion?***

These statements from the stakeholders reflect an opportunity that was created by the learning alliance for a researcher to move out of a research setting into a practitioner setting to exert some influence. This creates a potential situation where research could have an impact beyond academia. The experiences of Esther reflect interactions with community members, interactions with the general stakeholder group (including politicians) and interactions with researchers at the international level, once again bringing into play the global dimension, similar to Felicity’s experience of learning from other counties. Esther also went through a similar process of

1. Knowledge acquisition (coming to develop an understanding of the LA process, getting information on water management from stakeholders within the LA and other research colleagues within the SWITCH consortium as well as community members)
2. Knowledge sharing (through presentation and discussion with stakeholders)

3. Knowledge utilisation (using information from stakeholders to shape future research).

6.5.1.3 Stakeholder 3 – Researcher (Category 4)

James considers himself as a development practitioner with a background in engineering. He has been working as a researcher and consultant for over 15 years. His area of interest is water supply and sanitation. He became part of the project as a result of his institutional involvement in the SWITCH project and was assigned to be a workpackage leader. His recollection of how he became part of the SWITCH project is as follows:

“I might have done research in that area...so [my boss] assigned me to that workpackage. The WPs were chosen before I was assigned. [I was] not part of project proposal writing.

This researcher from the beginning was distant from the process of developing the project and learning alliance and comes over as a passive stakeholder who is then expected to play an active role. This is indicated when he talks about not being part of the initial processes and then being assigned by his boss. He however expresses some excitement about the subject area for the learning alliance and sees a good opportunity to work together with stakeholders in the learning alliance.

“I thought the project (IUWM) was timely; the thinking of integration and closing the loop was fantastic. Also working with the stakeholders on the platform was good”.

He sees the topic of the learning alliance as being in the forefront of current knowledge and as a young researcher finds it exciting, which makes him want to be a part of the process. He also noted that the concept of integration was important since the different parts of the hydrologic cycle had an impact on each other. While he was excited about the topic, he did not have very high expectations of the process because the workpackages were fixed and he did not have the opportunity to change them. This view echoes similar sentiments made by Esther. His expectations however did not change at the end of the project and as a researcher, he remained at the periphery of the learning alliance process. His peripheral involvement in the learning alliance was not limited to him. Within the project and in other cities, while it was hoped that researchers would have an active role in the learning alliance, they were not mandated to be a part of every learning alliance meeting or activity. The involvement of some of the researchers like James was mainly linked to making presentations to the learning alliance. Reflecting on his experiences with the LA this is what he had to say:

“The LA idea was good; just that at the time it came it did not allow flexibility they [the SWITCH Project Managers?] thought for the city.”

The statement reiterates his earlier point made about the inflexibility of the project. From this experience he tells what he would do differently in a future research project that uses a learning alliance process.

“We would look for a project in which in the first year we will define the project with the stakeholders; so that we can define the areas that are relevant to stakeholders so that even before the results are out they will be asking it”.

The sentiments expressed here indicate that he did not find a lot of stakeholder demand in the research that he was undertaking. He would have preferred to work closely with the stakeholders during the project. Even though he felt that the project was not demand driven, he believed that an impact was made on stakeholders, especially through the learning alliance, reiterating his point that the LA was a good part of the project.

“Yes [SWITCH has made an impact]; they [stakeholders in the city] have seen that SWITCH is there;... SWITCH has made an impact. Even this concept of learning alliance at the national level [referring to NLLAP section 5.2.2.5] SWITCH has played a major role”.

Despite his peripheral involvement and seeming disappointment in the research process, he expressed the fact that the learning alliance aspect of the project had had an influence on his research and how he would approach future research.

Q: Has SWITCH influenced your view of what research is?

A: “Yes; especially the learning alliance components. How to get research results into the public domain so that it can be used”.

His understanding of the learning alliance indicated a passive involvement in the process.

“A forum/ platform that encourages adult learning in a relevant way. You are told the topic so you decide your interest and attend and if you find something interesting you learn”.

Some of his views on learning alliances were shared by other researchers in a similar position as him. There were some researchers (e.g. Thomas, section 5.3.2.1) in other learning alliance cities, who did not have the opportunity to be part of all learning meetings and therefore shared similar views about the potential level of influence of the learning

alliance. While James was not a part of all learning alliance meetings, he placed a certain value on learning alliances.

“I go to learn if I like the topic; also for networking - sometimes I need to talk to a particular person; I am able to adequately participate”.

He however does not remember making much use of information from the learning alliance, but he noted that the quality of information received was satisfactory. With regard to the quality of information, the following conversation ensued:

Researcher: How do you see the quality of information from the learning alliance?

James: *“It [The quality of information received from the learning alliance] is good;*

Follow up question from Researcher: *How do you know the quality is good?*

James: *[I have] inherent criteria [for ascertaining the quality of information from the LA]; when I see it [good quality information] I notice it”.*

He however did not think that his participation in the learning alliance would lead to a drastic change in his institution given the size and level of bureaucracy in the whole institution.

James: *How can I change [my institution]; it is big; it does not need change, the sector needs change.*

Follow up question from researcher: *Q: isn't it part of the sector.*

James: *That component of the sector does not need change”.*

While not confident of the impacts that might have arisen from the learning alliance over the 4-5 year period, he acknowledges that some influence was made with one of the tools used by the learning alliance in integrated urban water management.

“Not too sure; because we picked it at only 3 points [referring to aspects of IUWM dealt with in the learning alliance]; it does not make it strong. If you look at the RIDA that is what everyone will quote; it has brought everything together; it was not there previously”.

He notes there is a limited impact of the learning alliance work in the whole of the city of Accra and the national level water sector in Ghana. While acknowledging that the research of the learning alliance did not cover all aspects of urban water management, he still notes

that the contribution of the RIDA will play a vital role in providing information for the water sector. The experiences of James can be categorised as follows:

1. Knowledge Acquisition (picking information from stakeholders in learning alliance)
2. Knowledge sharing (sharing his research with members of learning alliance and being involved in discussions during learning alliance meetings)

Knowledge utilisation does not come up strongly in this case perhaps because of his peripheral involvement in the process and some indication of inadequate reflection on the process at the time of the interview.

6.5.1.4 Stakeholder 4 Researcher (Category 4)

Afia is a researcher with one of the SWITCH partners. She has a background working as a scientist within a University before joining the research institute that she worked with as part of SWITCH project. Afia indicated that she was part of the group that developed the concept for the SWITCH project, particularly the research work that should be done in Accra, including the proposition of Accra as a demonstration city. Her interest in being part of the SWITCH project was partly due to the fact that the idea of urban water management was in line with her research activities at the time of the project and saw the opportunity to be part of the research consortium. With the SWITCH project coming on the heels of a previous project (with other SWITCH partners) with similar research, she sought to build synergy through the SWITCH project and find an opportunity to take her research work further. The other reason for her interest in the project had to be with the multi-disciplinary nature of the project and the systems thinking approach that the project adopted. Having been a key partner of the conceptualisation of the project and learning alliance process she provided an insightful reflection of the project and the research.

When asked about whether the project influenced her view of research, she indicated that she there wasn't much change in terms of her research about but she indicated that she had learned a lot about partnership. As she put it;

“the necessity for when bringing different disciplines, the partnership needs to be well developed in the context of different points of views, need to lay a solid foundation otherwise individuals will be going in different directions, need to form a team and agree a clear direction right from the time of developing the project so implementation will not be a challenge”.

This statement refers to how the power relations and dynamics within the consortium itself were managed. It also links to the role of facilitation and coordination not only of the learning alliance but also of the research process. Within the consortium and within each city, each researcher had their own workpackage, along with their own budget and external workpackage leader that they had to work with. So, while the researcher was supposed to be responsible to the LA members in the city, the same researcher was also responsible for achieving project deliverables which were required by the Workpackage leader. The work package leaders and project managers approved of each of the researcher's budget for the following year and the approval of budgets were linked to deliverables that were achieved in the prior year. Therefore, within the project researchers had struggle between the LA and their respective WP needs. In addition, the challenge with research coordination was that it was difficult for the research and deliverables that had been separately designed, to be retrospectively made to align and that brought challenges with coordination. In effect, each researcher was doing their own work, trying to collaborate in terms doing LA activities together and having to report back to their workpackage leaders on their deliverables. They were in effect more accountable to their workpackage leaders rather than the LA, but the researchers did their best to share their findings regularly with the learning alliance. At each LA meeting the programme was developed such that research findings could be shared. The motivation for intra-city collaboration among researchers was more limited given that the researchers had to deal with external "bosses".

Her reflection on the project methodology is that it was not well conceptualised, in terms of how it will be implemented. Echoing other concerns by other researchers, she indicated that the project was "*supposed to be an integrated project but it is not well integrated*". This comment perhaps underlies the need for an integrator team as was determined and formed by the Project Management Team in 2010 in response to an EU review that pushed for more integration of the project.

The earlier statement by Afia referring to the inadequate coordination of research within the city LA also links with issues that were first raised in chapter 5 regarding the project design and the scoping study. While an initial appraisal of the challenges facing each city was done prior to the start of the project, the actual scoping, mapping and analysis of stakeholder roles took place after the project was started, at a point where it was going to be difficult to make radical changes to the research deliverables and goals that had been agreed on and that each researcher was expected to work on. Further to this, she made note

of another issue that was briefly mentioned in chapter 5; casting her mind back on how the scoping was used to influence the project, Afia has the following to say:

“[The project] was supposed to respond to the need of the city but in most cases it did not respond to the need. So there is a learning alliance with its priorities and there are researchers who are doing their priorities but in my case the research is responding to the priority relating to water quality”.

“The divide in the consortium, the complementarity was not well utilised, groups doing their own thing – the potential capacity of the group was not well utilised”.

The comments indicate the seemingly parallel rather than collaborative nature of the research, demo and learning alliance process. The two comments above reflect the fact the idea of a demand driven aspects of the project were not achieved. Rather the project focused mainly on research that researchers believed to be addressing a need in the city. In response to this at one of the sharing meetings, the question was asked about the level of investigations that informed the selection of workpackages for each city. The learning alliances then had to maintain the interest of the stakeholders through the strategic planning activities and visioning process while regularly providing access to the researchers to share their information with the platform to keep the researchers relevant in the process of the learning alliance and to maintain the link between research and use.

As noted from the beginning a challenge of the LA process was the limited funding and resources that were available for the operations of the LA. Afia describes her experience and how it influenced the LA process:

“At the city level the LAs could have done with enough measures for their operation and enough budget to facilitate the LA – to allow the members to move around”.

She also notes the limitation in the budget of the learning alliance for operation and facilitation and to allow cross learning among members²⁸. With the progression of the learning alliance, the formal meetings among the stakeholders involved in the process reduced and there were more informal interactions and field work among LA members.

“I started the LA at the start in the first year; I was involved in the scoping study, in consultation with the stakeholders, some of whom were part of my research and became

²⁸ **note of city water summit, learning and sharing meeting and Zaragoza 2010 summit.

part of the implementation – five institutions involved – IWMI, Water Research Institute, University of Ghana, Ministry of Agric, Farmer organisations. The design of WP 5.2 was to have a multi-stakeholder group, so this was part of the approach and function as a working group within the LA, not very formal after the first year, after this all flow along with the LA. Had meetings in the first year or two and after the demo was defined had no formal meetings as subgroup, had training in water use for agriculture that went beyond treatment of water.

In her mind as a researcher, the project and the research were quite successful. Even though there weren't a lot of formal meetings, she believes the results of the research were positive and will make an impact if it is used.

“[The] likely impact is, if recommendations are used, it will lead to reduction in the health risk associated with the use of waste water from agriculture – more at the consumer level of vegetables – public health. Reduction of the water pollution load if urine is used. Increase use of waste water for productive activities including water for agriculture by encouraging the use of the water for agriculture.”

Her description of the likely impact will be further discussed when it comes to the discussion of the outcomes of the demonstrations in section 7.6.

The learning process of Afia is characterised by,

- knowledge sharing
- knowledge acquisition.

Her comments also give some reflections on the research and LA process. The process of research in some ways runs parallel with the SWITCH research. While the LA was expected to be the vehicle for doing collaborative research, the visioning and strategic planning activities sometimes conflated with the research and demonstration process. In Accra, the presence of working groups within the LA helped to provide a means of getting its members to participate in the research activities; particularly those who had interest in the subject area of urban agriculture given that the larger LA has a wide range of stakeholders some of whom were outside the scope of the demonstration activities. As noted from the institutional mapping in chapter 5, urban agriculture while it was significant within the Agriculture sector was not a mainstream activity in the water sector.

6.5.1.5 Stakeholder 5 Research user (Category 6)

Vladimir is a consultant to one of the development partners. He has been working on the water supply aspect of urban water management for close to thirty years. He has a

background in engineering and considered himself a member of the learning alliance. His experience with SWITCH indicates that he felt the connection between the research and practitioners was not strong. So while there were a lot of interactions, Vladimir believed the research in this case was not situated in practice.

“SWITCH and the learning alliance need a bridge between what is academic and what is operational. You must be able to do that....”

This comment can be linked to one of the project goals to be achieved through the use of a learning alliance approach. This is to use the learning alliance as a platform for action research where there is a direct and regular link between researchers and research users in contrast to the case of conventional research where research is undertaken without consultation with the stakeholders (Figure 6.2) and the learning alliance is only used as a platform for the dissemination of research results. Vladimir’s experience in the learning alliance was largely influenced by two main issues, his perception of researchers and his constant attendance at other meetings. Vladimir’s perception about researchers is given as follows:

Research brings innovations; I believe in research we should not be static. The only problem [with researchers] is that they are looking at their promotion in the university. Otherwise research is good link to practice [or] it becomes abstract.

Other comments made by Vladimir indicate that he sees researchers as far removed from the world of practice, having information that is only relevant for their students, but not sector practitioners. On the other hand, his comments also indicate that he sees research as a vital part of innovations. Vladimir’s assertion will serve to support the point of having a learning alliance where researchers do not remain in an academic setting, but rather engage strongly with stakeholders and undertake research with them (figure 6.3).

While believing that there is a strong need for a bridge between academia and practice for which the learning alliance could serve as a bridge, Vladimir has a view of the learning alliance influenced by his participation in so many other sector meetings. He expresses views that indicate a fatigue with too many meetings and too many documents from meetings.

“For example: there are so many meetings; have so many documents from different workshops and conferences that you make a lot of effort to forget”

As a donor, he is invited to every water sector meeting. There is a tendency for participants to be inundated with a lot of meetings, creating fatigue, especially when they perceive the meetings as not having topics that are of interest to them. He makes a note of this in other statements. The statement above however, which makes reference to “bringing people together to share information”, acknowledges a process of knowledge sharing within the learning alliance, but Vladimir’s point strongly indicates the issue of individual interest and organizational interest in the learning alliance process. Individual interest is emphasized by the point he makes about efforts people make to forget information from conferences due to what might be termed as “information overload”. This describes a situation where Vladimir is only tries to keep information that in his mind is useful and interesting. Any other information that does not meet these criteria is disposed of. His subsequent statement emphasizes this point. When asked what motivated him to attend learning meetings this is what he had to say:

It just appears that there are too many conferences or meetings. Because there are too many it depends on your judgment; you note something [meeting] that is coming up [when you assess the meeting that is coming up and it adds not value] and that might be better you write it off

Vladimir’s point indicates that where stakeholders have the authority to determine which meeting to go to, they have inherent criteria (even if not consciously articulated by them) for deciding which meeting to attend. When asked a follow -up question on what criteria affect his judgment of meetings as mentioned earlier, he noted that his criteria are often related to how relevant the meeting is to his current sphere of work

“[there is] No particular criteria [for deciding on which meeting to attend], because as I said it is not linked specifically to your project [referring to SWITCH], ...you (referring to what one is expected to do as part of responsibilities in their organisation) are obligated to [attend a meeting] because they are going to discuss your issues. For example, for [discussions on] urban water issues GWCL should be interested, the WB should be interested. [However] If there are abstract things that are not linked to what is being done then you are not interested”

Once again, the issue of the topic for the meeting comes up as the motivation for attending learning alliance meetings as mentioned in earlier cases of Felicity and James. There is also the inherent linkage to people’s jobs and how the topic is related to the jobs that stakeholders do. The interest in attending learning alliance meetings relates to the stakeholder’s ability to make a clear link between the topic to be discussed and the stakeholder’s role or mandate. Once again we note the reference to too many conferences

or meetings. His second point about attending a meeting depending on one's judgment brings out an inherent factor that decides whether stakeholders attend a meeting or not. For some stakeholders such as government organisations which are invited, or for people who are sent by their superior officers, they may not have a say in deciding whether they go to a meeting as compared to others who may have a choice. He also makes references to organizational interest in meetings and suggests that there are some topics for which organisations may and should have an interest. Since individuals represent organisations the comments made by Vladimir show how important individual learning is to organizational learning. Although not mentioned by Vladimir, an implication of what he is saying is that where there are no mechanisms to transfer information or knowledge picked up by an individual it will affect the ability of a learning alliance to influence organizational or institutional change. These issues will further be discussed under the chapter dealing with the institutional set up for learning. Based on his experience Vladimir was asked to describe his concept of learning alliance.

“I was going to say, I don't see any alliance; a group of people coming together to share information but we don't have an alliance. With an alliance, there is sharing; you want to learn from me and I always want to learn from you. If we come and there is the same [person] presenting [all the time], the moment you see learning alliance you can predict the people who will make presentations unless your alliance is a teacher student alliance”

His response indicates that he was more interested in the alliance aspect of the definition. His perception of an alliance would have been more presentations from the different stakeholders of the learning alliance. Secondly, he felt that the learning alliances did not allow for much discussion or contribution from stakeholders. Though not explicitly stated, his comments indicate that he acknowledges knowledge sharing but does not acknowledge a balanced level of interaction among stakeholders. While there was room for discussion, his comments indicated that he would have expected to see other stakeholders standing in front of the meetings making presentations or he would have preferred to see a round table where discussions were held with everyone contributing. This perception about the alliance not being too interactive could however have been influenced by the level of participation of Vladimir. Even though Vladimir had the opportunity to be part of such group work during the learning alliance meetings, he was not part of all the learning alliance meetings and training workshops. He was mainly involved in the feedback workshops. His view could also have been influenced by feedback presentations from the SWITCH researchers and coordinators and his perceptions about researchers (which is discussed in the next

paragraph). Based on the notes from learning meetings however, stakeholder participation was diverse and different stakeholders were allowed to present back group work.



Figure 6-5 Group work from planning and coordination in learning alliance

Vladimir's experience has been interesting to discuss because even though he strongly supports the concept of a learning alliance he also comes across strongly as not supporting learning meetings in general. For him, the opportunity cost of meetings is high, if they do not have a direct impact on physical infrastructure.

"...with regard to the amount of money used in organising the meeting; say if we use these monies to install water supply, everyone in Accra will have water".

Perhaps he makes use of hyperbole to show the frustration of having many meetings that do not seem to have an impact on the water sector; his point being that if the meetings are meant to improve service, but service remains the same after different meetings and different projects then rather than having so many different meetings, a better way of investing sector funds will be direct investment in physical infrastructure. His statement indicates that meetings do not have much influence on the sector. Other reasons given for this, such as the level of stakeholders' participation is further discussed in Chapter 7. Vladimir's statement is no different from other stakeholders whose comments meant that they were interested in having concrete implementation of activities to show that the learning alliance has achieved something. The value of information received is not considered as much as the value of infrastructure that is put in place. This is noted in the first meeting where stakeholders during the formulation of vision made reference to the

building of physical infrastructure. There is an underlying indication that Vladimir does not accept the “expertise” of researchers in leading the learning alliance process because he sees them as being far away and not well grounded the “practical” water sector. He further emphasizes the need for information to be relevant to practice.

“You should zero in to what is being done so that you get people to use them” Vladimir on what will make people use information.

“One other thing is that lecturers (Profs from KNUST) should get some practical experience. For example, James (5.3.1.2) has some practical experience because he has been doing consultancies. They should be involved in real consultancy work so that it enriches their practical knowledge; they enrich their practical knowledge. We have passed through the mill and see that some things are not working; when you present for some time I know where you are coming from, whether from academia or from practice”.

Vladimir’s position about researchers gives evidence to support the need for a process such as the learning alliance which aims at breaking barriers among stakeholder groups. The key experience from Vladimir also has to do with how information is packaged for the users. Esther (6.5.1.2) an academician noted that she had learnt from her interaction with stakeholders that how academic information is packaged is very important. The experience of Vladimir strongly supports this point made by Esther. Another stakeholder with the same engineering experience as Vladimir and having worked for the same organization as Vladimir within the same time scale, makes reference to issues about learning, supporting the importance of the language in which information is communicated.

“...Maybe that is why some people don’t want to learn. Maybe they find it difficult to grasp the language” (Celia, Water Engineer)

While Vladimir expressed some sceptical views about the process, it can be noted that he did find some useful information and he did indicate that he tried to situate his learning experience and information in his work. His learning experience can mainly be described as knowledge acquisition and some beginnings of knowledge utilization, although there had not been much reflection on the knowledge acquired. As indicated, he sometimes tried to forget some of the information to make room for more relevant or interesting information.

6.5.2 Stakeholders from Birmingham

This section describes the experiences of other stakeholders particularly from Birmingham in the United Kingdom. Unlike Accra and as mentioned in chapter 4, the context seen here

is an already established well-developed urban water management system vis a vis water supply, waste water and storm water management. While there are some challenges, it is noted that the existing institutions have functions that are more clearly delineated as compared to Accra. The challenge within this city was thus introducing learning to an already established system. While there were different levels of interests among the stakeholders in Birmingham, their responses in general indicate some level of commitment to the SWITCH process and to the vision of the city.

6.5.2.1 Stakeholder 6 Researcher (Category 4)

Like James (researcher 2), Thomas was not part of the team involved in preparing the proposal. He was part of the institution when the position came up. The difference between himself and James is that while James was assigned the job of doing the research, Thomas applied to be part of the process out of interest, even though he was not exactly doing work in that research area prior to the project, his prior research experience was in a related field. He indicated that he had to learn a lot in order to undertake his research in SWITCH. He found the project on IUWM unusual compared to what he was doing. While Thomas recognised the potential role of his research in contributing to IUWM in the city within which he worked, he saw it making only a small impact. Thus, from the beginning of the project, he adjusted his expectations not to expect too much change.

“I expected that given the cost of green roof installation, developers and planners would be reluctant to do this. Decision makers were likely to stick to the end of pipe solutions that they were familiar with, especially as green roof science is in its infancy with many uncertainties. Therefore, realistically I didn’t expect much of an impact”.

Both James and Thomas recognise existing systems and bureaucracies as being barriers and resistors to change. This could be due to the huge amount of inertia within such systems and the tendency to remain with the status quo. Two issues identified in his statement that act as a barrier to change are (i) the cost of change and (ii) people’s attitudes. Like James, he was peripherally involved in the learning alliance, but he still had knowledge of what was going on within the learning alliance. So what different did the learning alliance make?

“There are many more people in the city council who are more open to the idea of the green roofs than I expected, [but] not on the level at which it will make an impact. You will need a massive system to make a change but what we are doing is limited. [However] the seeds of change that have been sown are ok”.

His engagement and continued interactions with some of the learning alliance members brought about a change in perception. His initial view of the acceptability of the technology was based on an “outside” view which did not involve much knowledge of the learning alliance members. However, after taking part in the learning alliance activities he gained an “insider” view that softened his perception of stakeholder acceptability of change. While he was not involved much in a feedback role, he had members of the learning alliance approaching him to ask for advice with regard to technology selection for innovation that was promoted. Even though he points out that the technology had not been perfected, the interest and request for advice indicate that engagement of stakeholders through the learning alliance has had an influence on his research.

When asked what he will do differently, he identified a number of issues. One of them had to do with the level of ambition of the project in terms of the scale given the limited time available. He admitted that such an action research process needed time.

“In the end, a two-year timescale (especially given massive difficulties and delays in getting the experimental set-up going) was not long enough to adequately study the ecological development of the green roofs. I have therefore been studying their development over a longer time-scale with a pared-down sampling regime ever since the official end of the green roof research. A longer time-scale could therefore be useful”.

He indicated that there were some initial difficulties in starting up and getting meetings together. These had an effect on the timing of the process. A second issue for him was the design of the research in relation to the learning alliance process.

“The problem with the learning alliance is that it was set up after researchers had started up the research. The idea that the LA can feed into research was not achieved. The LAs would have been better if they had been set up 2/3 years before the research”.

These comments make allusions to fixing the researcher’s work prior to the start-up of the learning alliance. The views expressed by Thomas in some ways are similar to the view of another young researcher in the Birmingham. The older researchers also expressed a similar sentiment about having the learning alliance contribute to research by designing research after the initiation of the learning alliance. For all researchers interviewed, the learning alliance provided an opportunity to influence research but because the research was fixed beforehand, it did not give much flexibility in terms of redefining research. For this researcher, a slight glimpse of the global dimension of learning alliance is seen where

the work that was done was shared with stakeholders and researchers in other cities apart from the city that Thomas was working in.

“[There have been opportunities for sharing] in Birmingham and also In Tel Aviv and in Germany– [I have] been over and talked about my work. As I said, it is so different from what everyone is doing so there hasn’t been much scope for collaboration”.

Thomas expressed that while there was opportunity for sharing there was not much scope for collaboration. This could be attributed to the point made earlier about the scope of the research being fixed and not having opportunity for much flexibility. My own experience as a facilitator in the process was that while there was opportunity to get in touch with researchers in other cities who subsequently had interest in city within which I worked, there was not much room for them to add on the city to their research. This was probably due to the fact that the resources for the research; time; funding and human resources, remained fixed. The collaboration was mainly in sharing their experiences from their cities.

The learning experience of learning alliance shows an unexpected result for Thomas regarding stakeholder acceptance of technology, resulting in a change in perspective about the role of the learning alliance and the contribution of his research in the city. Given the context of already established systems in Birmingham, it was not surprising that there was an initial limit to the level of impact that the project or demonstrations could make. It is however significant to note that the engagement and the use of a demonstration and the learning alliance process whereby city stakeholders had the opportunity to have discussions with researchers, began to create a new way of thinking for urban stormwater management among the city stakeholders.

He also recognised the importance of the learning alliance process and indicated that the learning alliance process should have led the research process (see figure 5.5). So as a researcher, he now saw the learning alliance not just as a platform for the dissemination of information, but an integral part of shaping the direction of research. He indicates the research work he had been involved in had an influence on his work.

“It has certainly had an influence; things I have learnt from that have been useful to the work I am doing now.”

The experience of Thomas can be seen in terms of

- Knowledge Acquisition (information from learning alliance members)

- Knowledge sharing (presentation at meetings and answering of stakeholder questions)
- Knowledge utilisation (use of information to shape other research)

6.5.2.2 Stakeholder 7 Researcher (Category 1)

Winston is a researcher with a science and engineering background. He worked as one of the lead researchers in one of the workpackages. As a researcher he was interested in getting published. His expectations and aims within project were mainly to

“...complete all research and get it published; disseminate results more widely...”

This was similar to the views expressed by other researchers in the same city. He had knowledge of the users of his research within the city; the city council, Water Company and the regulator. Winston’s experience with the learning alliance indicated that to have learning alliances influence research as was envisaged by the project, the learning alliance process should have started first.

“An LA needs to be there before you start the research. But if you have to do that [start the learning alliance process before action research is commenced] you need some quick wins; short research for LA to get their teeth in to know what to do. If you want to run LA as we wanted, [then we should have] agreed a pre-defined work[plan] with the funder for 18 months and thereafter you can run in the direction that is decided by the LA. I would have frontloaded the global knowledge to the LA; who is doing what where, what is worth doing and why [it is worth doing]”.

This statement could have been influenced by his view and experience of difficulties with completely changing research once it has been designed and set up. Changes, he noted, are easier in the design phase. As a researcher who was part of drafting the research aspect of the work, his statement reflects the value placed on the contributions that learning alliance members can make to research. These comments resonate with the suggestions from other researchers about how best the learning alliance could have influenced the direction of the research. In this case, the proposition is for the learning process instead of the other way round. This assertion once again resonates with the project goals of researchers working closely with stakeholders to jointly identify a vision with its supporting research area. His statement also indicates some level of eagerness from members of his learning alliance for knowledge and information. The need for “quick wins” is important to keep the interest of the learning alliance members. This is buttressed by the following statement:

“The LA has to be patient. If you have to run an LA, you need something new to say each time and this sort of process should be thought of. If the LAs will take the research results, then you need people who understand that”.

The above statement would support processes of initial scoping, stakeholder analysis and institutional mapping which are tools that were used to develop a deeper understanding of the interests and potential roles of stakeholders in the learning alliance, as well as the challenges faced by stakeholders. One challenge he identified in the learning alliance was the lack of flexibility within organisations, meaning that meetings had to be thought about months before so that stakeholders could include it in their plans. The lack of flexibility noted does not allow for spontaneity of meetings, but it also indicates the position of learning alliance in relation to the day-to-day work of stakeholders. This observation is similar to comments by other stakeholders about considerations that are made before attending a learning alliance meeting.

While Winston saw the information provided by the global learning alliance as critical, he felt there was not much scope to achieve a higher level of cooperation in terms linking his research to the needs of other cities.

“The global LA has not worked as much as I expected. ... [I] don’t see people in cities exchanging a lot [of cross visits]; e.g. Birmingham people zipping to Accra and vice versa...”

Despite some of the challenges noted, he pointed out that his research had strongly been influenced by the project and his participation within a global consortium also provided new networks for the development of proposals for subsequent projects.

“[My] two most recent proposals have been developed out of SWITCH associations; [the] last proposal I wrote was strongly influenced by SWITCH”.

New links and projects were being developed by the researcher through the alliance formed within the local learning alliance and global learning alliance.

6.5.2.3 Stakeholder 8 Researcher (Category 1)

Lisa is a researcher (not based in Birmingham) who was an external researcher involved in the research work in Birmingham. Her involvement came about when she was assigned to attend a workpackage meeting in the city (WP 3.1) after which she was involved in other meetings and workshops where her job could allow her. She was not interviewed but given a questionnaire similar to that given to other stakeholders to complete. The quotations used

here in this section will therefore be the direct responses provided by the researcher. She notes from the beginning that the learning alliance meetings gave her an idea of how the learning alliance was performing.

“Attending LA meetings gives me an understanding of how the LA platform is performing regarding the development of stakeholder partnerships and the process of agreeing a common future vision whilst working towards adopting a realistic strategic plan for implementing the research in the city.”

Similar to Afia in Accra, she notes that being part of the learning alliance gave her an opportunity for understanding **stakeholder partnerships**. A similar expression was used by Afia in noting her learning alliance experience. The issue of stakeholder partnerships from the learning alliance will be discussed at the end of the section. The second part of the statement underlies how the learning alliances ended up being – a platform for strategic planning. There was an initial push to avoid having a learning alliance as another planning platform but with time it is noted that the LA seemed to get into a routine of following on from the visioning and scenario planning to become a planning platform. The comment about working to adopt a strategic plan for implementing the research in the city is rather suggestive of her involvement in the process of transitioning from the outcomes of research to the use of research. This she noted in a paper was possible in some cities and not likely to happen in other cities.

Lisa further describes her changing involvement in the process of SWITCH. She indicated that from the beginning of the project, the focus was more on technical issues regarding IUWM but towards the end of the project, there was an increasing recognition for her to

My initial remit in SWITCH had a much more technical focus on the experiments / research underway, however this became a much wider remit which now considers the issues of governance, finance and the benefits of a working and cohesive LA to influence a transition in a positive direction towards IUWM. Entered the project towards the end of year three with the objective being primarily to collect data from the cities which met these goals and to observe stakeholder interaction and engage with the stakeholders during LA meetings / workshops attended. I attended four such meetings in Birmingham. Experience gained from working with similar stakeholder platforms combined with implementing sustainable urban water management practices in the UK / Europe and transition management research enabled me to provide practical guidance to help drive stakeholder collaborative efforts forward and encourage a partnership ethos for achieving integrated solutions to UWM in the city, especially when the LA were discussing the feasibility of solutions within an uncertain political climate (lack of policies to aid implementation / up-scaling to enter the transition take-off / acceleration phases) and undergoing the visioning process.

She also came on board the learning alliance at a point where a lot of work had been done by the learning alliance members in the respective cities. Her activity then was more to make use of data and initial results from the city for her research work. The work already done by the learning alliance platforms provided her with information and knowledge base for use in her own research. Thus, we see here an example of the learning alliance feeding back to the research.

Her participation in the learning alliance helped her to gain an understanding of what she described as the real barriers and constraints surrounding the development of sustainable solutions. She had the opportunity to work between two cities and made a comparison between them. She notes that

“although Birmingham is further forward than Glasgow with its experimentation and potential for up-scaling demonstration projects, it is finding it much harder to escape the technological lock-in situation due to very different political, institutional and financial dynamics”.

She however underscores the importance of the learning alliance when she describes the learning alliance and having been able to provide a platform for continuous engagement with the stakeholders. In terms of making an impact beyond the project, Lisa saw her university making use of the research results and getting it included in various online reports.

My university intends to use the research results in several taught and online master’s degree courses. Outputs will also be used in other research projects that UA are currently involved with (primarily Interreg EU funded projects) and final outputs will also be given to academics in Australia and the EU who have requested this data. In the field, we expect mainly decision makers involved with IUWM, local governments (including spatial planners), water utilities and major international agencies working in developing countries to use results.

Apart from the university, she had the opportunity to share the results of her research with other city stakeholders through the city water summit that was held as part of the project in 2010. The response for her was positive and it appeared that the idea of transition management and the potential of influencing a shift towards using IUWM was high. At the national level within the UK, she also saw the potential for the research to be used by stakeholders and had an optimistic view about the use of the research.

What is interesting about the interview with Lisa, is the response to the question of what she would have done differently if she had done the work again. Her response was that she

would have started the research phase earlier as it would have enabled more time to engage with more of the city.

“I would probably have started the research phase earlier as this would have enabled more time to engage with more of the city LAs and their research / demonstration projects. However, this is not a major hurdle as data coming out of the cities is very detailed and well documented.”

Perhaps she was referring to her own research because in the view of other researchers, one of the ways of improving the project would have been to start with the engagement of the learning alliance before the research was started. Her view might perhaps represent the typical researcher focus on deliverables and outputs by which they are marked. But her view at the same time links with a comment by one of the researchers of having some quick wins or something concrete that the stakeholders can get to engage with from the beginning of the project. This emphasizes the need for some level of conceptualisation and concrete activities to engage stakeholders (who have been earlier on described in some ways as visual learners looking for something material to work around). There should however be the space for change within the research and objectives such that stakeholder comments from the initial engagement could influence the direction of the final research and not that the learning alliance process will just serve as a platform for dissemination of research as it appeared to be in some instances. This signals the need for balance and flexibility in the design of the project; an issue that is sometimes difficult to manage if it is not agreed from the start of the project with the funders of the project.

Similar to most of the researchers she noted that the results of the research were valuable for the future especially in the area of Sustainable Urban Drainage systems. She however notes that challenges with legislation could affect implementation. She however noted that through the facilitation of the SWITCH project, the learning alliance had key stakeholders who had the potential to influence at the national level

“With the help of SWITCH, some of the most powerful stakeholders (in England) were involved in the Birmingham LA and they are now aware of the possibilities and solutions for a better future and will have the evidence (and hopefully the conviction) to influence policy in England which itself is in a transition state in favour of IUWM”.

Apart from the personal learning experience for her was also the opportunity to work with researchers in other disciplines. She notes that:

“working with other researchers, especially in other disciplines in this project has widened my knowledge base regarding adaptive SUWM solutions / practices for a range of global climates”.

This comment regarding the advantages of a multi-disciplinary project is seen from other stakeholder experiences, e.g. Afia from Accra, but will also be discussed in the next section which is about another stakeholder who saw the platform as an opportunity for building his capacity and knowledge in the water sector.

Lisa’s learning can be described as

- Gaining knowledge and sharing knowledge.
- Knowledge utilisation (use of information from the learning alliance to develop her research work)

6.5.2.4 Stakeholder 9 Research user (Category 3)

The interest of this stakeholder could perhaps be explained due to the fact that when the project started, he had only worked for one year in the water sector and thus the learning alliance for him offered an unparalleled opportunity to learn as much as he could from the experiences of others in the water sector to enhance his work (see other examples of stakeholder motivation for attending learning alliance meetings).

Raymond has an engineering background and had previously worked in a different industry. He saw the learning alliance as an opportunity to develop his knowledge base and understanding of water management. He therefore appeared as an enthusiastic stakeholder with support for the learning alliance. His enthusiasm is seen from his comments about how he became a member of the learning alliance;

“I came into Switch through [my organization], [the facilitator] wrote and invited them to join and they asked me. I came to the first meeting and enjoyed and agreed to come to all the meetings”

Perhaps his interest in the learning alliance can be explained by the fact that the information he was receiving from the learning alliance could have been quite new to him.

“As a chemical engineer, I am still learning a lot about the water industry”

“...regarding information about ground water levels in Birmingham, the representative from the city council made good points that I would not be aware of if I was not here. I

can learn a lot from coming here to pass back to others, lot of different disciplines here and knowledgeable people.

The second part of his statement also indicates his interest in processing the information and sending it back to his organization. Thirdly he makes note of “different disciplines” and “knowledgeable” people. He sees the LA as some kind of a repository of information and knowledge which is provided by people with different areas of knowledge. The interest in multiple disciplines is also noted with other stakeholders whose experiences have been shared.

Within a year of participation however he begins to move from an ‘outsider’ to an insider with some confidence (see figure 2.2) which is created by the platform (issues of trust and open space are discussed later). In 2008, after having taken part in the learning alliance for a little over a year, he notes his changing role in the learning alliance:

“Initially to listen and learn and feed info back to colleagues, now also inputting like the presentation today, so my role has changed since I started inputting”

Raymond makes a point about having attended every meeting since the learning alliance started and indicates that he makes a report back to his organization, which finds the reports useful in their line of work. From the interview, it appeared that he was happy whenever his organization gave approval of the work that he did with learning alliance and that also encouraged him more (in the subsequent interview he first reminded me that the organization was very happy with the first report and that made him happy).

“I have attended every meeting since they started. It has been useful, after each meeting I write a short report and feed it back and they find it useful to know what is going on, and they give me feedback that the work is useful”

This feed back to his organization is one of the ways organisations can learn from the alliance. In Raymond’s case, he is an enthusiastic stakeholder who places value on the information coming from the learning alliance and is eager to share back with his organisation. This can be contrasted with other stakeholders who do not share the information from the learning alliance. It also raises another question about feedback mechanisms in organisations whose employees take part in the learning alliance process. If the organization has a good reporting back mechanism then the information may get transmitted back to the organization, but if the organisation does not have such a

mechanism, there feedback will largely depend on the interest level of the individual stakeholder who has been nominated to attend the meeting.

Apart from the comments regarding the information obtained from SWITCH, Raymond also indicates a strong interest in the strategic planning process. For him this is very important:

“One of the few projects that takes a forward looking view, SWITCH is unique in looking in the long term which is where usefulness lies, not many projects have this luxury and the wide range of expertise represented in SWITCH. In that way, SWITCH is unique and useful

Several times he made reference in his interview to the importance of the long-term planning being promoted by SWITCH and also the wide range of expertise represented in SWITCH. This links back to the point he earlier made about the importance of having different stakeholders with different disciplines.

The experiences of Raymond also include the importance of an open platform where information can be shared freely among stakeholders.

“We deal with water companies on a day to day basis, so I meet them in other forums but I can say things here without offending them because I know them from other forums and the work that they do, which makes coming here more enjoyable.”

This open atmosphere gives a view that the participants are friends. Compared to Accra, a similar atmosphere was created where different stakeholders no matter their level had the opportunity to interact with other stakeholders at different levels. This highlights the use of the learning alliance as a tool to break vertical and horizontal barriers to communication by providing a platform for equal exchange of information.

For Raymond, his participation in the learning alliance can be summarised in the following statement that he made:

There is interest and enthusiasm about information, and think it is worthwhile to send someone here – a lot of knowledge and expertise here and learn how different disciplines interact together – energy, drainage, architecture etc.

His experiences are related to the use of the learning alliance as a mechanism for future planning, as a platform for driving stakeholder engagement and promoting interaction

among different stakeholder groups. He saw the learning alliance as a repository of knowledge from different areas and his learning experiences could be categorised as

- Knowledge generation
- Knowledge sharing
- Knowledge utilisation.

6.5.2.5 Stakeholder 10 Research user (Category 3)

Randy works on climate change issues. While he was not part of the LA from the beginning, his line of work is similar to the SWITCH objective and would be expected to be a stakeholder who would have a lot of interest because of his organisational mandate. His work involves assessing risks, prioritising, communicating and embedding issues around climate change in local council priorities. His involvement in the LA started when he had to replace a colleague who left for another job. Randy was part of the scenario building process and learnt more about the project from his interactions with the facilitator while working closely with the researchers. He noted that the researchers were keen to talk to planners and he worked with them to set it up (this shows the role of the LA in creating connections, developing networks and shortening the pathways to get information or innovation across to stakeholders who would otherwise not have been in touch with each other, as part of their everyday job). The word 'keen' which he used to describe the researchers shows the level of enthusiasm of the researchers in getting their research work into the domain of the research users. Randy notes that his main contacts through SWITCH were the researchers and notes that he probably would not have met those researchers otherwise and he saw the learning alliance as having offered an opportunity for providing a linkage between the University of Birmingham and relevant people within the city council.

Randy notes that his organisation's interests covered wider dimensions of climate change than SWITCH which only looked at the water aspect. He however indicated that for his work he found it important to understand issues that were linked to climate change relating to water.

[SWITCH] Work fits in well with climate change; we are building a model that looks at heat stress on urban areas. Switch looks at urban water usage. The two are intrinsically linked. Strongest features of SWITCH is scenario planning; it is easy to understand what we are talking about through the scenarios; to put them into tangible scenarios like in SWITCH is good; keen to hear about the first phase of the model [referring to city water]

For him one of sources of new information he obtained from the project was from the demo and how it might contribute the building resilience towards climate change

I know about green roofs; green infrastructure is one of the strongest ways of adapting to climate change in terms of cost effectiveness. Green roofs/infrastructure is one of the ways of dealing with heat stresses; there is a win-win situation if you can deal with it. There are so many win wins with green infrastructure.

On its own it might carry limited weight but if you put it in as a package (e.g. together with what we are doing, you can make an impact). Work will involve adding to the evidence we are already building.

Randy saw an immediate opportunity within his work for uptake of information from the learning alliance. He however highlights an important aspect of learning that emphasizes working together with stakeholders. Evidently, he notes that there may be limited impact within just the platform but dissemination of the information beyond the platform gave the chance of a bigger impact. Randy goes on to emphasise the critical role that is played by researchers in providing evidence for decision makers through their research and demonstration. For organisations that make use of evidence based planning, a platform such as the LA provides information for developing strategies and for planning.

In terms of the contribution of the learning alliance to the city plans for addressing water challenges, Randy notes a disjoint between the planning frame presented by the project and that in use by the local councils.

SWITCH is looking at the future and councils are looking at a shorter time scale. We can embed into their framework and present opportunities that are available for green roofs; there are a lot of opportunities for use and adaptation. To deal with city council/planners you will have to suppose they are speaking a foreign language to you and you have to be able to speak their language.

While the city planners have a long-term planning horizon they are concerned with the delivery of shorter to medium term goals. It therefore takes a lot of effort to deal with the interests of planners. Similarly, in Accra, it can be noted that the vision while it was expected to look at the city of the future appeared to focus on dealing with the challenges of access to water and sanitation that affected the city. However, it was noted that with time there was a change in the perceptions of stakeholders as they engaged with the strategic planning tools. Similarly, dealing with the city planners within Birmingham required that the LA considered their interests and planning activities. For Randy it can be noted from his comments that as an individual, he explored the opportunities that could be

found within the learning alliance as related to his work. This allowed him to find information from the learning alliance useful. He comments also indicate an internalisation process where he has thought of what to do with the information or where it might fit within the scheme of activities within the city as well as his work. The internalisation process fits in with discussion around reflection as discussed in the learning theories. With regards to dissemination of the information from the learning alliance, he noted that he shared it beyond his organisation.

“I’m part of a regional adaptation committee. I always mention SWITCH at meetings and it generates interest...Everyone is interested in what it is and what it does”

The experiences of Randy represent knowledge acquisition (learning about greenroofs), knowledge sharing and dissemination with his organisation and other stakeholder groups. His learning experience also indicates the development of new stakeholder relationships and a change in perception about researchers. It also highlights an internalisation and reflection process where the stakeholder has gone through an action reflection cycle with the information obtained from the learning alliance meetings.

It was noted from the beginning of this section on the experience of Randy that he had to join the learning alliance as a replacement for another person from his organisation. This highlights an issue with the continuity of members of the learning alliance. While it is ideal to have continuity of members in the LA, in instances where the same members are not able to continue but have to be replaced, it is important to have some feedback happening within the organisation so that transition from one member to another is smooth.

6.5.2.6 Stakeholder 11 Research Manager (Category 5)

Graham is an engineer by profession and worked with the SWITCH LA as one of the coordinators. His involvement initially was on the periphery due to his line manager’s involvement. While he had a backseat from the beginning of the project, he became more involved following a change in role of the previous coordinator. He viewed the project as a “valuable and interesting” project and was therefore pleased to be part of the process. Having settled in as a coordinator, he noted his first step was to get to know the stakeholder in the learning alliance as well as the project goals and objectives. For him as an individual his biggest challenge was that he was fitting into the shoes of a coordinator who had already built very good working relationships with the key stakeholders in the city. He spent his initial period trying to identify who the players were and he worked closely with the

facilitator who provided some direction from the beginning. He noted that because of the good working relationship that had been previously established it was relatively easy to pick up from where the previous coordinator had left off. He notes that the Stakeholders were receptive to the change because of their levels of engagement. It could also be attributed to the fact that he had also had some peripheral level of involvement from the beginning and thus while he had to go through the period of getting to know and understand stakeholders in the LA, they were not entirely new people that he was engaging with.

Graham noted that for him as a coordinator, another challenge had to do with maintaining the interests of some of the stakeholders and their organisations, some of whom were taking more interest than others.

“The main [challenge] is trying to maintain people’s involvement. Although individuals recognize the benefits and usefulness of the LA it doesn’t always fit into their working lives. There are tight constraints on people’s time. Also with the recession it is again a constraint on people time; work forces have shrunk and people may not have the spare time to spend at meetings.”

Another challenge for him as a facilitator was trying to build ownership in an organization. Similar to Accra, the design of getting the municipalities to own the process was challenging especially when they did not have direct responsibility for water supply. The different organisations with different responsibilities coupled with limited coordination created ownership challenges for the learning alliance as noted by Graham.

The way the UK water business are arranged and different responsibilities with overall control not being in the municipalities it is difficult to get ownership. There are relationships that exist between organizations/individual and the way they want to address the issues that SWITCH wants to address but you don’t necessarily get the same people sitting in the LA;

Another reason why organisations may have found it challenging building ownership and giving greater attention to the learning alliance could be due to resource constraints. Graham further identifies this as a key issue that affected interests and attendance at the learning alliance meetings.

There is time and cost to organizations because of the constraint; don’t know whether that had to do with budgeting; part of the fees available could have been given to the organizations making up the LA so that you can fund them and guarantee to say that someone can contribute a certain amount of time each year to say I can contribute the LA. You are relying very much on good will and people saying I can fit this into my day. It depends on the individual’s roles; e.g. I have to account for every hour; if they don’t have something that they can book their time against, they may not be interested

You may get someone who comes to a meeting and then goes back to their office and makes up for the time spent by doing their day job later.

There is a cost linked to participation and as noted in earlier chapters (section 5.2.4, 5.2.5, 5.2.7, 6.5.1.1) in relation to stakeholder motivation in participation, the critical interest in taking part was the organizational interest. This is linked to ideas of institutionalization and mainstreaming or building ownership that was thought of by the project. While this seemed laudable, building ownership was not an automatic task given that resources (time and budget) were needed. This was a disincentive to the learning process because unless the organisations were fully involved, it was difficult to get the individuals involved. How do you get organisations to be interested from the beginning? The scoping thus should have not only been to inform organisations of an impending project but also it could have perhaps been done differently by identifying potential stakeholders from the onset of the project design and seeking their interests and contributions in designing the projects. Following on this, the organisations could be asked to make representations and follow up regularly with the institutional heads. Relying on goodwill and its implications – an automatic desire for stakeholders to work together may not be enough for stakeholders to get fully interested.

As a consultant, Graham became more aware of the opportunities that existed in terms of working with universities. He noted that there was scope for developing more projects and making use of the research organisations in other projects; not necessarily projects that are research based like SWITCH. This represents a change in perspective on the role of research organisations and universities. He also notes the interest of his organization in continuing the new networks that have been developed as a result of participating in the project.

As organization, we will be keen to continue links with other organisations; [my company] is keen to contribute into these areas [IUWM technologies]; that is part the way it is organized and their approach; we can see benefits in some of these things and we are prepared to put some of our money in.

The last point about the organization being prepared to put their money in is reflective of one of the initial goals of SWITCH that one of the indicators of change is that organisations are prepared to put in some money. While this company was a SWITCH partner and therefore already had the interest of contributing money to still.

“We have an internal water skills network; it is run as a monthly lunch time presentation; it enables presentations to be shared between organizations. We make presentations of SWITCH at such meetings”.

For him as a coordinator, he felt the biggest contribution from SWITCH was the introduction of the City Water Tools which got the city stakeholders well engaged and he imagined it to be the tool that would persist beyond the end of the project.

6.5.3 Changes in stakeholder perceptions

The stakeholder experiences described above indicate a lot of interactions among stakeholders resulting in knowledge acquisition and sharing, even among sceptical stakeholders. At the beginning of the project, it was noted that stakeholder perceptions on how water should be managed were mainly based on their own prior experience in the water sector. From the experience of stakeholders described above, there is a suggestion of an internal process that has brought recognition and change in understanding among the stakeholders who have been a part of the learning alliance. This can be linked to the first order of learning that was described in chapter 2, section 2.3.3 and subframe 2 described under the conceptual framework in section 2.3.8.

6.5.3.1 Changes in Stakeholder Perceptions in Accra

Based on descriptions in sections 6.2 to 6.5, two kinds of learning are noticed. The individual learning observed from individual stakeholder experiences and the resultant collective learning evident at learning meetings. The collective learning was influenced by changes in individual perceptions. Individual learning experiences were mainly related to new information acquired from the learning alliance and the sharing of knowledge with other LA members. Knowledge from the learning alliance influenced individual stakeholders who made use of knowledge acquired for their everyday jobs and personal use. With regard to collective experiences, it was noted that with time and continued engagement in the learning alliance, some changes were observed in stakeholder perceptions. Some observable changes in stakeholders:

- Coming to a point where stakeholders themselves call for the inclusion of other stakeholders (4th LA meeting, 6.3.1.4); stakeholders hold meaningful discussion and stakeholders can better relate to the refining of the vision;
- Stakeholders now see institutional bottle necks as the bigger challenge to addressing the vision they prescribed earlier on.

- Policy forum (6.3.1.6); at which point stakeholders again call for the inclusion of stakeholders

In Accra, the call for inclusion of stakeholders brought up the proposition for a coordination platform which is discussed in Chapter 7.

6.5.3.2 Changes in Stakeholder Perceptions in Birmingham

Similar to experiences in Accra, the learning alliance provided a platform for the generation and exchange of knowledge among stakeholders. It was perceived by stakeholders as an open platform that supported the sharing of information (refer to interview of Raymond). The use of demonstrations in learning alliances also influenced stakeholder thinking on aspects of urban water management. An example was the emergence of a new way of thinking among urban stormwater managers in Birmingham with the experimentation on green roofs. For individual researchers involved in the process, there was a change in perception of how research can be designed to best influence stakeholders in water management. Collectively there was a change in scope towards bringing in other areas not defined earlier in the learning alliance process. This includes the expansion of the process to involve developers. The process of learning also raised concerns about issues of sustainability for which professional associations were used as an extension of the learning alliance to share information with other stakeholders. There was also the promotion of sustainability through the creation of a younger persons group of the Chartered Institute of Water and Environment Managers (CIWEM).

Another important outcome that made a difference in changing stakeholder perceptions or increasing stakeholder interest in the learning alliance in Birmingham (as noted in previous chapters) was the Eastside study which was conducted by the LA. This document provided an opportunity to create sustainable thinking in the regeneration project that was being undertaken by the city. While the project was already on-going, the intervention provided by SWITCH gave the city members space to re-think how to handle the issues raised by the report. As noted by a coordinator of the project in Birmingham, based on the interactions that went on around the report and other LA planning activities,

“SWITCH would be a good reference for a point in time where people start to change. The project came at a time when it and other projects were giving major consideration to issues of climate change, urbanisation, population, energy etc.”

With the report raising the importance of giving attention to issues around sustainability the research provided information to keep the interest of stakeholders and also offer integrated urban water management approaches as a means of dealing with the change pressures. The study also through the learning alliance encouraged the cooperation among the government, research and private sector (compare with Accra where there was on major private sector player. In Birmingham there was a player like advantage west midlands).

6.6 What are the Factors that promote learning?

6.6.1 Stakeholder Motivation

The previous section has discussed the stakeholder participation in meetings. Figure 6.1 gives a snapshot of stakeholder participation in meetings from the first meeting to the final meeting based on registered participants. Recalling from the previous chapter and from the first part of this chapter, we note that the initial scoping exercise gave an opportunity to explore possible organisational interests relating to the learning alliance, based on the respective organisational mandates. As noted, beyond the organisational interests, the individuals attending the learning alliance meetings also had interests influencing their decision to attend the learning alliance meetings. Individual stakeholders were interviewed to identify these. Interviews with different stakeholders provided insight into some factors that influence attendance at meetings. An interview with one of the stakeholders is presented below. Regarding the main reason for attending meetings, this is what the stakeholder had to say:

“The topic decides; you can look for information and educate yourself on that before [you go]..... That is why I said it is a platform for learning and it enhances you. You have the opportunity to acquire knowledge and other things and you can apply it to your situation”.

For this stakeholder, the reason is enough motivation such that even when she has to pay for her own transportation, she does not mind since the benefits outweighs the cost:

“Sometimes, if there is no vehicle you have to pay your own transportation to attend; if you are fortunate the accountant reimburses; it depends on him. Sometimes the head will specifically instruct that you do that, and then he pays. Recently I spent money going to for a meeting because there is no car - it was at my own cost.....

[Does it encourage you to attend meetings?]

I'm not really bothered. Like I said there is opportunity to learn so you go anyway. As humans you complain. At first when you attend meetings they give money but these days they don't but we still go".

In this statement, we also see a changing trend; that if they can afford the cost, or if the meeting is beneficial enough then one may not have to worry about transportation cost. At the beginning, we had to provide transport costs through a fixed transport allowance for people who attended meetings. For the last meeting of the Accra learning alliance, we did not have to pay any transport costs and we did not have many complaints from the stakeholders.

The actions taken by stakeholders as a result of the meeting were also examined; Joint decisions taken by learning alliance members; for example; visioning strategy building; and working together to achieve the common vision.

During the interviews, the way that stakeholders talked about the importance of the topic for discussion as influencing their attendance at meetings, fits with the definition of the LA as bringing together stakeholders in a "topic of mutual interest". A common response of stakeholders to the question of motivation for attending meeting was about the topic of the meeting. The following are some specific stakeholder responses to the question of what makes you attend a learning alliance meeting.

"The topics that will be discussed [will decide if I will come for a meeting]; if they [the topics] will be useful to me and will improve on my work. [There are] competing demands in the office. If there is something that is more urgent I attend to that [instead of coming the an LA meeting]" (WD2, Policy making institution)

This respondent talks about the usefulness of the topic to be discussed but also raises a critical point to say that if there are other office demands, they will consider that before the learning alliance. This statement is indicative of the fact that this stakeholder does not consider attending the meeting to be part of the mainstream work or to have a level of importance as compared to mainstream office work. This can be compared to responses from other another stakeholder that works with a development partner.

"If I have a number of meetings to attend, I first look at the invitations; in what capacity is it- at the personal or official. Second is it a meeting that my expertise will contribute or it is a meeting that I will be a participant. For me first priority is the mandate of my organisation. I compare mandate to meetings [invitations] that are clashing; then I ask myself which of these meetings is it that if am absent; the impact will not be felt and someone can replace me? There are some meetings that you can't afford to miss. If there

is none [i.e. if there is no meeting he cannot afford to miss], I ask, 'which one can I learn from'? I personally like the learning alliance because you have to keep up with technology changes in the sector. How do you keep up with that [except by being part of these meetings?]'".

Clearly this stakeholder has come up with an internal mechanism for assessing which meeting to attend. The first priority is that the meeting should be official. This suggests that he does not see the learning alliance invitations as always being official. By official he meant an invitation through his organisation and this is confirmed by his statement that he compares the meeting to the mandate of his organisation. He further indicates that his interest in a meeting is also heightened by whether he is an active or passive participant. This statement points to an interest in making presentations as a means of making him feel a part of the meeting. His perception shows that if he is simply part of discussions he may not feel a part of the meeting [a similar disposition shown by Vladimir who did not consider his contribution to meetings through discussions as active participation]. This stakeholder however indicates a personal interest in information and learning and these can be related to the topic of discussion which was mentioned by [WD2].

Relating the first part of the response to an experience of the learning alliance facilitator, I sent invitations to stakeholders to invite them to the 2nd learning alliance meeting. We did not have representation from one of the organisations (regulator) and when a follow up was made, the contact person to whom the invitation had been sent indicated that the invitation was not official (i.e. the invitation was sent through email) and that is why he did not attend. [There is a challenge of having a system where most people's emails are private/personalised emails rather than official emails. National organisation stakeholders have personal email addresses, international companies have official email addresses]. This suggestion of officially inviting stakeholders to the meeting led to writing to the heads of organisations for the third meeting. However, some of the stakeholders who had previously participated did not attend and when some of them were asked they indicated that once you send the invitation to the head of the department, they will nominate anyone without considering who may have attended the meeting previously. For organisations with just two or three staff who always attend meetings this was not a problem, but for larger organisations it meant a different person coming each time. The suggestion from one of the stakeholders was to write to the head of the institution, indicating the invitation was for the attention of the person that the LA team wanted to attend the meeting. A second letter of information should be provided for the head to invite the designated person to

meetings. This also points out a gap in organisational reporting which will be discussed subsequently.

The responses from [George] can be compared to two other colleagues from his organisation about why they attend meetings.

The topic has to be interesting; relevant to either my professional development or my current job role; maybe a little bit of networking; it does help to know all these people as well. (LR)

The statement from George's colleague reemphasizes the relevance of the topic, first to personal development and the relevance to their job or organisational mandate, but also raise another dimension of interest in the learning alliance meeting which is shared by a researcher with in the same age group and profession as her. James indicated the reason why he would want to attend a learning alliance meeting as: *"I go to learn if I like the topic; also for networking sometimes I need to talk to a particular person". James uses the learning alliance meeting as a place for 'transacting his business' or meeting people in the sector whom he knows will attend the meeting and from whom he needs information.*

Still comparing the responses of George to that of other members of the organisation, another colleague of his indicated the following as his reason for attending a meeting. This colleague has not been an active member of the LA, although he had heard of the SWITCH LA through discussions with his colleague and so provided an opportunity to look at the LA from another view point.

"The topic [will decide whether or not I attend a meeting]. The meeting will have to be an interesting meeting. My concern will be that the meeting will be inefficient and I will not be thrilled if I have to wait an hour before the meeting starts. For me an interesting topic/ something that is relevant to me, that will be the catalyst"

This colleague of George also makes reference to the relevance of the topic for discussion. He further makes a point of time constraints. Time constraints have been identified by stakeholders as reasons why they may or may not be able to attend an LA meeting.

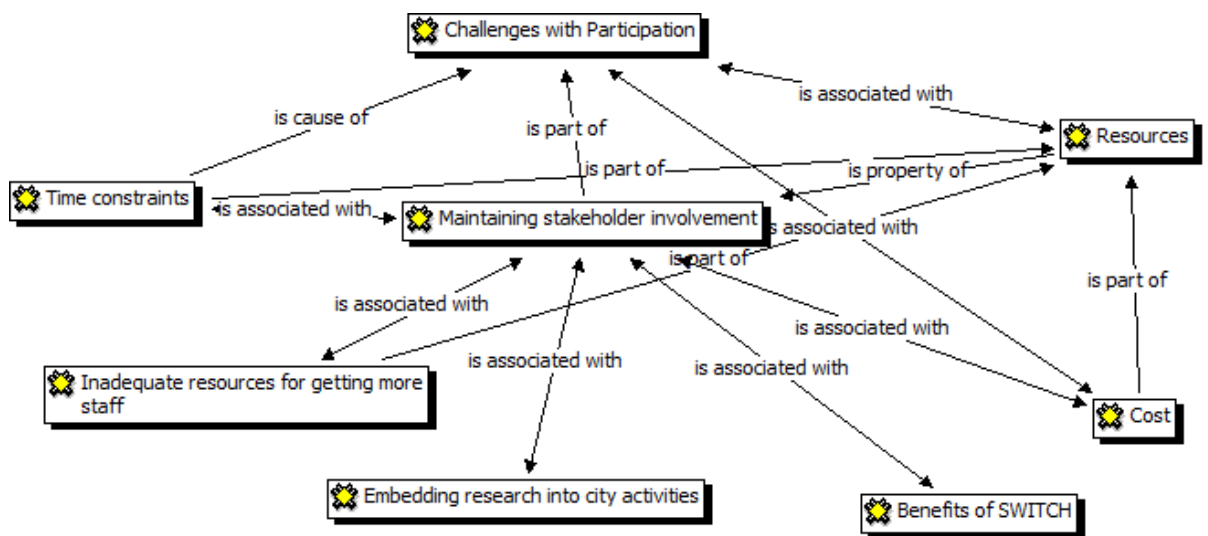


Figure 6-6 Stakeholder Perception on issues related to sustaining interest in learning alliance

This time constraint is implied in other statements by the other stakeholders who make mention of conflicting demands from their regular job.

What issues does [George’s] boss consider before attending meetings? His boss indicated that he considers a number of factors at different levels. Firstly, how valuable the meeting is to influence overall [water] sector directions (he was talking in his role as chief of section and as a member of a Development Partner (DP) organisation that seeks to influence government policies and direction and how it relates to the strategic approach of the organisation to influence the government). His second consideration was whether the meeting was related to his work and how it would help work in terms of achievement of his of level of results as head of the organisation. His third point was about the importance of the meeting in the sector; i.e. meetings were on relevant issues and important decisions would be taken or where substantive discussion would take place. His fourth point on considerations he took into account before attending a meeting had to do with information sharing. On this point, he indicated that if the meeting was just for information sharing he would have to de-prioritise it so as not to dissipate his energy attending all meetings and risk not getting anything done. It is clear from his position that while he may find the topic interesting and want to get information from the meeting, if the meeting does not have a clear direction ‘or purpose’ he may feel inclined not to attend just for the sake of information. The last point about the risk of not getting anything done can be related to time constraints and conflicting demands from work that was mentioned by other stakeholders.

Comparing the responses of George, his colleagues and his boss to two other different DPs from different organisations, a similar note about the relevance of the topic or subject of the meeting is mentioned.

The subject; if they are talking about the small town systems; that is the area I feel I have something to contribute to. Can reschedule; depends on what happens within the week and how I can make time; but I can always try to attend. Like this one on small towns because it is related to irrigation engineering and my background in pipes, I will be interested in a meeting on that (JSEU)

Another response from another stakeholder organisation:

It just appears that there are too many conferences or meetings. Because there are too many it depends on your judgement..... you are obligated to [go] because they are going to discuss your issues [e.g. urban water issues]. If there are abstract things that are not linked to what is being done then you are not interested (Vladimir, DP).

The issue of time is also raised by a stakeholder from the city authority who was a key participant in meetings;

“when we attend meetings, you come back and realise you are hard pressed for time - you are measured according to your output in the office.

For this reason, before stakeholders make decisions in attending meetings, they might ask themselves the following question; which is also asked by others in their office.

So people ask how relevant is the topic? [is there something useful or interesting from the meeting? Can I come back and share? [the person also considers] the Topic and the available time the person has and the time the meeting is scheduled’

His colleague talks about the importance of the objectives of the meeting,

What the meeting seeks to achieve or what the meeting tries to give to participants; if it is helpful, then fine (learning alliance member, AMA).

This statement made by the stakeholder from the city authority, is reiterated differently by another stakeholder who works for a development partner.

Question from researcher: Can you explain what you mean by ‘inefficient meeting’?

Inefficient; if there was not real agenda, no facilitator to run the meeting, if the activity is not interesting; if we have to wait around; the presentation is [boring?]; everything is getting off track;

A stakeholder from the water company also mentions the word agenda.

*If you call a meeting and you don't have an **agenda**; you must tell me what it is about; if I think I have something to share or something to learn from there, I will attend; if I look at the agenda and see it is not interesting I may not want to attend. [If] you call a meeting and there is no agenda; it is difficult for someone to decide to come (GWCL 4)*

The responses show a common thread: the relevance of the topic, either for their work or as related to the mandate of their organisation, or of use for personal improvement. The responses indicated that for most of the stakeholders the relevance to their jobs came first. Beyond the topic, meetings called must have well defined objectives. The responses of some of the stakeholders above show the need to be part of a process that contributes to an objective [sense of achievement]. Stakeholders indicated that they wanted to have some “concrete” results from the learning alliance. Comparing this to the learning styles of stakeholders which is discussed further in section 6.6.2, we note that most of the stakeholders are active and visual learners.

These statements underscore a desire of stakeholders for a kind of issue based stakeholder engagement. This response of stakeholders is reflected in the definition of learning alliance as bringing stakeholders together around a topic of mutual interest. The learning alliance can thus be described as an issue-based stakeholder engagement.

A study by Roloff (2007) showed that issue-focussed stakeholder management is the dominant type of engagement in many multi-stakeholder platforms because of the ability to address complex issues and constraints in stakeholder collaboration. While Roloff (2007) points to research that indicates that there is not a particular approach to stakeholder engagement, it would seem from stakeholder responses in this study that the design of the learning alliance around an issue of mutual interest - Integrated Urban Water management - is an appropriate way of bringing stakeholders together to solve issues of Urban water management which are complex.

Beyond the topic, other reasons are assigned for attending meetings included the influence of champions and influence of politicians.

“[I come to the meetings because of] Collaboration and networking. Because I went to one of the programmes from Ministry of Local Government; we got into collaboration with a local NGO now we are doing something different. We always want to make sure the customer is satisfied with our service. Politicians decide for us which meeting to go; our plans are as intact as politicians decide”.

Following up with this stakeholder, I asked what would make him attend a meeting if he had time and he indicated that it would be linked to networking. For him, the bottom line for attending meetings is networking. He however raised a point about how meetings can link to an improvement in the work of his organisation and another point related to the role of politicians. This stakeholder works with the water service provider and water being a key political tool means that politicians have a high interest in the water company.

While it appears that power is concentrated with the politicians, I suggest that stakeholders appear not to have not been empowered to recognise the power that they themselves have and they assume that the politicians have more power. My observation is that the politicians rely on technical persons for information and therefore indirectly the technical people can make suggestions to politicians or give advice to politicians on issues that matter.

Another stakeholder's interest in attending the meeting was related to the involvement of a key researcher in the training. The name of the researcher triggered an interest in him to attend a meeting. This was based on his previous encounters and training under the researcher.

Another stakeholder who mentioned the convener of the meeting as being important is a media practitioner. When asked what would motivate her to attend meetings, she said the following:

“The topic; I ask what are they discussing or who is presenting (main factor)”

For the media person, apart from the interest in the topic of discussion, the main factor for her was who is presenting. The interest in who is presenting is related to her work. When she gets back to her organisation, she is expected to write a report on the meeting and to bring news to her organisation. In her view, the person who is presenting therefore has to be news worthy. During the first learning alliance meeting, immediately after the official launch and the speeches of the key guests (Minster of Water Resources and the Mayor of Accra), the media indicated that they wanted to leave. Furthermore, they requested copies of the speeches that were given by the special guests. On the second day of the meeting, most of the media persons did not attend the learning alliance meeting. However, relationships with the media developed over time and by the 2nd to 3rd year of the learning alliance there were a few dedicated media persons that could be relied upon to be part of

learning alliance meetings. The developing relations meant that the learning alliance coordinator and facilitator were invited to be part of radio and TV programmes, especially around world water day.

Comments from stakeholders regarding attending meetings related to their institutional mandate, supported the need for the SWITCH project to mainstream the LA so that LA members would see attending meetings as part of their regular job. Stakeholders also referred to their bosses as being influential on their involvement in the learning alliance. From these comments it became apparent that getting institutional buy in and ‘formalisation’ would ensure representation and participation from some of the key stakeholder institutions. This led to the development of letters of intent which were shared with stakeholders to be presented to stakeholder institutions to encourage commitment and participation. However, getting interest and formal letters sent by stakeholders was not enough to ensure continued participation. As noted, the topic has to be relevant, the LA should have clear goals and objectives (perhaps something that can be measured – stakeholders called for concrete results) and also time constraints need to be considered. The objectives of the LA could have been better shared and stakeholders involved more in the monitoring of the progress of the learning alliance.

Based on the stakeholder responses, it was expected that one of the outcomes of the learning alliance would be an improvement in the level of stakeholder information on the topic of IUWM. This is explored in section 7.3.

Generation of knowledge came from within the learning alliance; the researchers were not necessarily acting as experts but there was the creation of an atmosphere of trust where stakeholder knowledge was respected (no restriction to knowledge brought on board by stakeholders; stakeholders were free to contribute to meetings; different levels of stakeholders including farmers and community members, felt empowered to be part of meetings).

Some stakeholders were looking for greater opportunities within the learning alliance to improve on themselves. This encouraged them to be part of the meetings. Personal factors or personal use of knowledge for learning were of higher importance for some individuals in the public sector

Individuals' learning experiences were influenced by their interaction with stakeholders, the development of new networks and accessing information of perceived good quality.

Comparing Vladimir's statement to other colleagues who are also development partners most of whom interestingly have an engineering background, this is what they had to say about factors affecting their decision to attend a meeting.

in the sector we have all seen the clashes of meetings - sometimes called to 3 meetings at a time. First I look at the 3 invitations; in what capacity, is it at the personal or official. Second is it a meeting that my expertise will contribute [to] or it is a meeting that I will be a participant (passive). For me first priority [is that] I am a [DP] staff our mandate is to support government to devise, implement strategies and policies...[I] Compare[our] mandate to the 3 meetings that are clashing; then I ask myself which of these meetings is it that if am absent; the impact will not be felt and someone can replace me? There are some meetings that you can't afford to miss. If there is none, I ask which one can I learn from, and at the same time make the impact with the mandate I have from [my organization]? For us if the LA meeting is clashing with our head of office, no compromise; if it is the resident coordinator; no compromise; if meeting with DPs I have to be there because I am coordinating with the DPs; interestingly these things come and compete with good platforms that you can learn. (George, working with DP)

This statement highlights a number of issues, firstly the clash of meetings suggesting an inherent need for coordination of sector meetings and the role or niche that the learning alliance has to find for itself in the bigger sector within which the learning alliance is situated. His statement also raises the legitimacy, importance or influence of the LA as it is situated within the broader sector. In this process, the learning alliance is seen mainly as an informal institution. There is also an issue on the ability of individuals to connect their roles to the learning organization. Linda, who works with George in a similar capacity at the same organization, presented her view of the learning alliance process. Her response to the question of how she considers meetings in relation to her other work functions, was:

If I had time I wouldn't mind participating. It is a forum for learning and I place a lot of value on that. When you are working, you have other activities to attend to; if I had all the time I will make time to attend.

Contrasting her experience with George from the same organization, this is her response to the opportunity cost of meetings.

"If I were a private sector person then I will look at the cost. For opportunity cost; it fits in with what we are doing, i.e. within [DP organisation] to come up with new knowledge and innovations and know what is going in the sector. It only adds value to my work so it is not a problem"

She further indicates that she came to the learning alliance meeting out of interest. These statements show an internalization of the learning alliance process and information obtained from the learning alliance process with respect to the work that she is doing. She and George work within the same sector within their organisations with similar levels of experience and both at similar levels in terms of seniority.

6.6.2 Role of Learning Alliance Tools in Learning

This chapter earlier described the processes and tools used in the learning alliance process. As indicated, the processes and tools used included the following:

- Learning Alliance Meetings (section 6.3.1 – detailed description in Appendix 3a)
- Training Workshops (section 6.3.2 – detailed description in Appendix 3b)
- Resource Infrastructure, demand and access studies (RIDA) section 6.3.3
- On site Demonstration and field experiments (section 6.3.4)

One of the impacts of making use of socio-technical tools was that they opened up more avenues for improved stakeholder dialogue and interactions. As we have followed in section 5.2, the tools were used to facilitate different kinds of interaction among varying stakeholder groups. The general meetings gave stakeholders opportunities for continuing interactions. Proponents of social learning indicate stakeholder interaction as a critical factor in the learning process.

Comments given by participants indicated the creation of new networks from meetings. They also indicated acquisition of knowledge from these meetings. They further acknowledged the openness of meetings and opportunities for discussions.

Based on stakeholder comments and the review meetings, it was noted that in terms of the learning processes, meetings supported the generation of knowledge and sharing of knowledge. Meetings allowed for stakeholder interactions, the intensity of stakeholder interactions increased as the learning alliance progressed. Apart from the learning alliance meetings, the facilitator took part in external meetings aimed at sharing/dissemination of research findings and learning from the LA to other platforms. There were also smaller meetings and interactions with stakeholders. The progress of the LA general meetings and their contribution to the general learning process is given in table 6.5.

Table 6-5 LA meetings and contribution to learning process

Meeting	Agenda Activity	Output in relation to learning	Level of Stakeholder interactions
1st LA meeting (March 2007)	Introducing Project Understanding Stakeholder expectations Defining Vision	Understanding Research needs of stakeholders, vision for the city. This can be linked to Generating knowledge; knowledge acquisition	Partial interactions of stakeholders
2nd LA meeting (August 2007)	Refining vision and development of scenarios		Work planning together
3rd LA meeting (May 2008)	Scenario Planning, transformation of LA into a planning platform (adding strategic planning to the activities of the LA)	10 Strategic Directions for the achievement of the vision; formation of the working group for strategic planning and development of ToR,	Joint discussion, initiation of collaborative research
4 th LA meeting (June 2009)	Sharing findings of research, RIDA	Knowledge sharing	Systematic Learning with common vision
5 th LA meeting (November 2009)	Sharing findings of research and updates of information with wider stakeholder group in water sector in Accra	Knowledge Sharing	Joint discussion
6th LA meeting (January 2010)	Finalising RIDA document	Knowledge sharing	Concerted Action
Policy Forum (November 2010)	Sharing findings with policy makers	Knowledge sharing and utilisation	Exerting Influence at scale through joint advocacy

The preparation of the RIDA document (see section 6.3.3 and section 7.3.1) also gave the legitimacy needed by the facilitators to let stakeholders see that there was adequate progress being made by the meetings. Information was provided that improved stakeholder meetings (it would seem that stakeholders always want something “concrete” to discuss; facilitation to ensure that workshops have adequate information for discussion and

adequate plans; clear objectives for the meetings). At this meeting a clearer picture could be shown of the real state of water and sanitation in Accra using figures from the water company (putting the figures in this form is useful for most stakeholders; even the water company itself; makes reference to the document even though a lot of the information came from them. The difference then is how it was presented and how easily it had been put and translated into access etc. Now stakeholders could actually point out the troubled areas and make more specific recommendations to deal with particular issues).

6.6.3 Learning styles of stakeholders

One of the mechanism or activities of the learning alliances was the training workshops. The training workshops were also used to provide opportunities for learning. While training workshops were interactive, they also apply to the cognitive aspects of learning discussed in chapter 2. The learning styles of stakeholders were assessed as part of the learning alliance activities. This was done for a cross section of stakeholders who attended learning alliance meetings

Table 6-6 Learning Styles for Stakeholders in Accra

Learning Style Group	Range/scale of learning style	Number of stakeholders
Scale A	Active	15
	Reflective	7
Scale B	Sensing	13
	Intuitive	9
Scale C	Visual	20
	Verbal	2
Scale D	Sequential	14
	Global	8

On the active-reflective scale, we note that the dominant learning mode for the stakeholders is active learning. In a situation where most of the stakeholders learn by doing, an action or activity is conducive to promote learning. A plot of the learning modes also showed that the stakeholders were highly skewed towards visual learning.

Graphs of learning styles of stakeholders

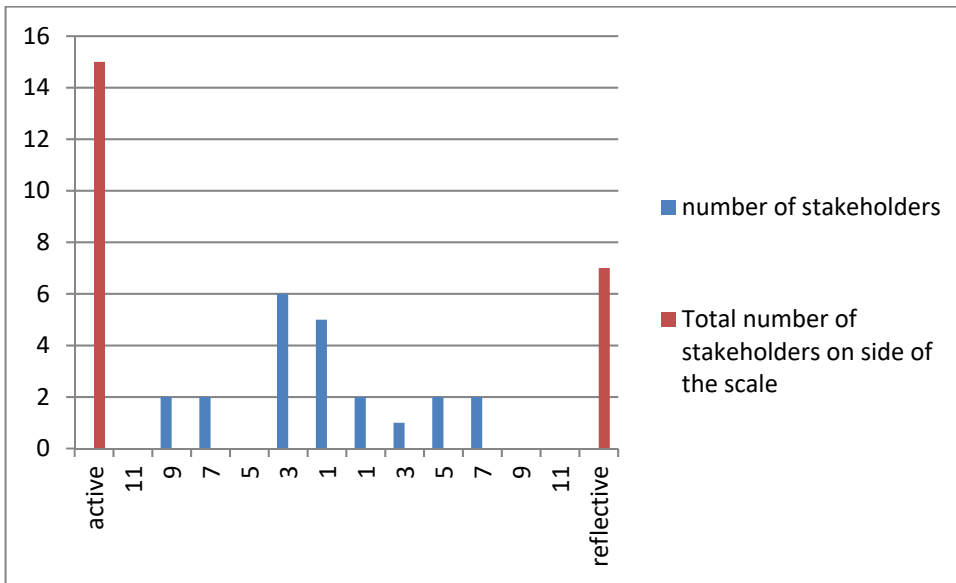


Figure 6-7 Active-Reflective scale

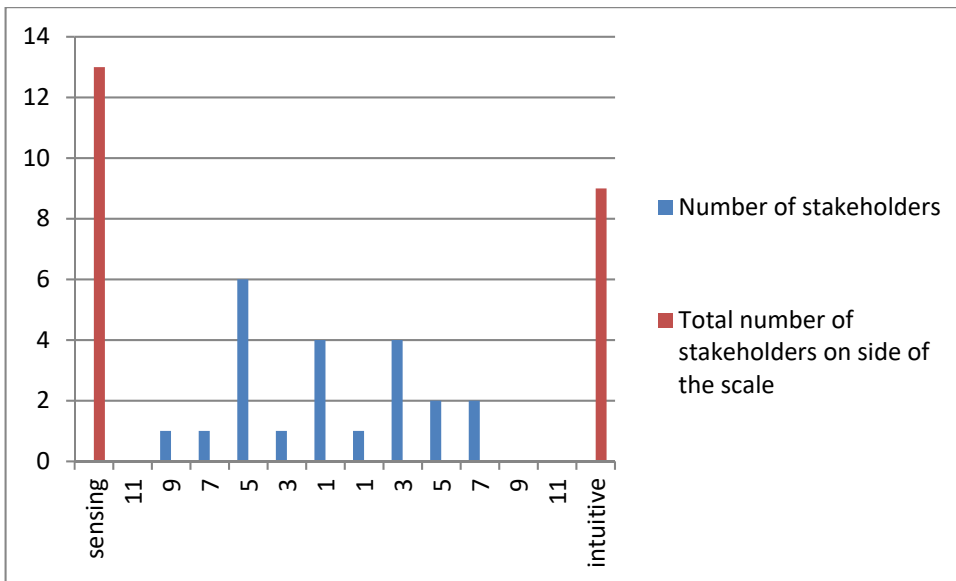


Figure 6-8 Sensing-Intuitive scale

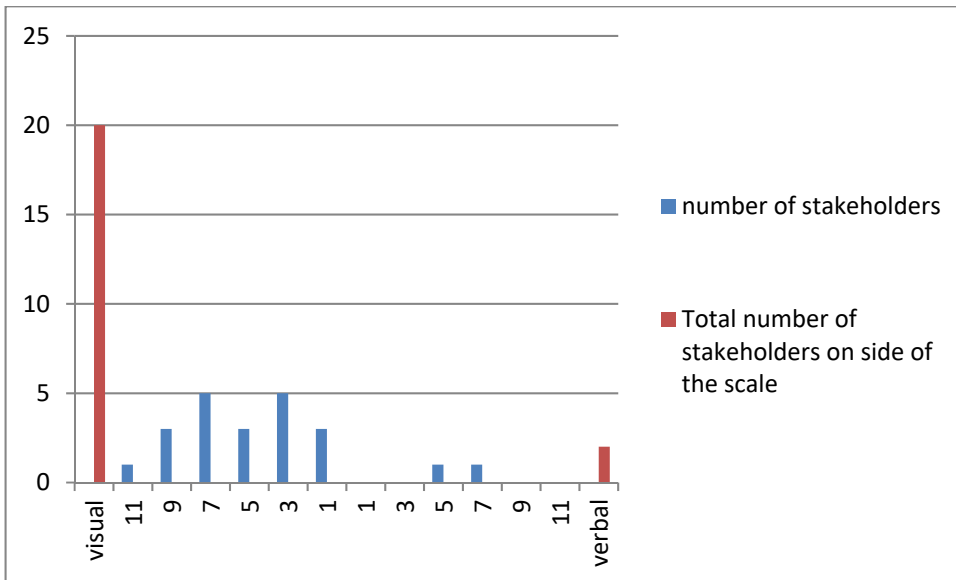


Figure 6-9 Visual-Verbal Scale

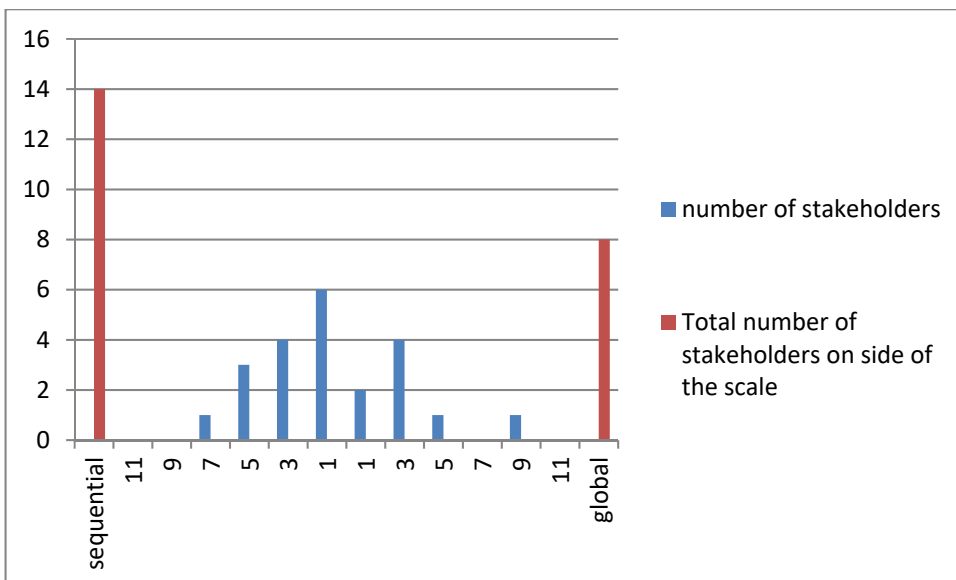


Figure 6-10 Sequential-Global scale

6.7 Discussions and conclusions on learning

Activities leading to change in understanding and behaviour of stakeholders included general meetings, training workshops, RIDA Study and action research and demonstration. The following summarises the process of engagement of the learning alliance.

6.7.1 Summary of Learning Experiences of Stakeholders

A direct observation for the LA process is an increased level of interaction and stakeholder dialogue; the increased level of interactions facilitated learning through engagement and knowledge sharing. Increased knowledge generation, sharing and use by stakeholders helped to focus the learning alliance; it was at this point that people felt the value of the learning alliance and there was an increasing level of engagement in the learning alliance process. Participants changed the way they thought about each other and the learning alliance; researchers particularly saw the alliance as a platform for feedback and for refining their research strategies and they begin to think about what stakeholders want when they are doing research. Marginalised stakeholders at this point gained confidence and explored how they could improve their interactions within the learning alliance. Trust was also built among stakeholders; they began to view each other more as “friends” and seeds of collaboration were sown. They moved from the individual level of informal relationships to a more formal relationship where stakeholder organisations are brought in. Similarities can be drawn between the stakeholder experiences in the learning alliance process and the descriptions of social learning given in chapter 2. Reed et al 2010 indicated that for learning to be considered as social learning, the following need to be evident:

- (1) A process that takes place through interactions among actors within a social network*
- (2) A change in understanding of the individuals involved*
- (3) Influence of wider social practice*

In terms of knowledge acquisition, the responses from stakeholders were analysed to assess any mention of new relationships, new skills, new information or new insights that have been gained. Knowledge sharing responses were analysed to identify those that made mention of dissemination of information and the process by which the knowledge that has been gained was disseminated. Dissemination mainly took place with colleagues within their office space and with their bosses. There were also instances where within the learning alliance, information was shared across members. Based on the stakeholder interviews the following diagram (Figure 6-11) indicates the learning experiences based on the framework described in section 2.3.8 subframe 2.



Figure 6-11 Processes through which learning occurs in the LA

There is interaction among stakeholders as noted from the discussions at meetings and other knowledge sharing activities. There is also sharing and influencing in a wider sphere beyond the learning alliance. Stakeholder experiences described in section 6.5 also indicate change in perceptions and understanding of issues around integrated urban water management. These suggest a social learning process as based on interactive learning.

Blackmore, (2007), notes that discussions about the nature of learning can have both theoretical and practical dimensions. While the observed process of learning is characterised by knowledge acquisition, knowledge sharing and knowledge utilisation, Social learning which is the result of interaction among stakeholders is characterised by convergence of goals, co-creation of knowledge and underscored by a change in behaviours. The evidence presented in this chapter suggests that different dimensions of learning occur during the stakeholder interactions in the learning alliance.

Table 6.7 below presents a summary of the stakeholder experiences described in sections 6.5.1 and 6.5.2. The summary of stakeholder experiences across the different categories and different cities are very similar. Whether enthusiastic or sceptical, all stakeholders recognised the role of the learning alliance as a platform for knowledge sharing and also the development of new knowledge (which in the case of the SWITCH learning alliance was strongly supported by the research components). The stakeholders saw the knowledge developed or obtained as useful for their work or the sector within which they worked. In terms of learning, based on the framework that was developed (box 2.3); the following summary of knowledge related activities can be made:

1. Knowledge acquisition
2. Knowledge sharing (within the learning alliance and back to the organisations)
3. Knowledge utilisation (use of information obtained from learning alliance in their respective work places). For researchers this represented use of feedback from learning alliance to improve research and also to decide on new research areas

Table 6-7 Summary of Stakeholder experiences from participation in learning alliance

SN	Stakeholder Category	Summary of Experiences
1	Category 4	<ol style="list-style-type: none"> 1. Acquisition of knowledge (information picked up from learning alliance meetings about water quality and processing of information into knowledge) 2. Sharing of knowledge (with stakeholders in meetings, with international participants, reporting back to her organisation and contributions at other workshops, information for her students) 3. Use of knowledge (use of knowledge to inform decisions at work, for personal studies and for teaching)
2	Category 3	<ol style="list-style-type: none"> 1. Knowledge acquisition (coming to develop an understanding of the LA process, getting information on water management from stakeholders within the LA and other research colleagues within the SWITCH consortium as well as community members) 2. Knowledge sharing (through presentation and discussion with stakeholders) 3. Knowledge utilisation (using information from stakeholders to shape future research).

3	Category 4.	<ol style="list-style-type: none"> 1. Knowledge Acquisition (picking information from stakeholders in learning alliance) 2. Knowledge sharing (sharing his research with members of learning alliance and being involved in discussions during learning alliance meetings)
4	Category 4	<ol style="list-style-type: none"> 1. Knowledge acquisition (from various stakeholders in the learning alliance) 2. Knowledge sharing (sharing of research results and findings)
5	Category 6	His learning experience can mainly be described as 1. knowledge acquisition and 3. knowledge utilization
6B	Category 4	<p>The experience of Thomas can be seen in terms of</p> <ol style="list-style-type: none"> 1. Knowledge Acquisition (information from learning alliance members) 2. Knowledge sharing (presentation at meetings and answering of stakeholder questions) 3. Knowledge utilisation (use of information to shape other research)
7B	Category ½	<ol style="list-style-type: none"> 1. Knowledge acquisition (developing knowledge of water management from different perspectives) 2. Knowledge sharing (sharing of research results with stakeholders for feedback) 3. Knowledge utilisation (current research had strongly been influenced by the project and his participation within a global consortium also provided new networks for the development of proposals for subsequent projects.)
8B	Category 1	<ol style="list-style-type: none"> 1. Gaining knowledge (building capacity through exposure to different stakeholders both local and international) 2. sharing knowledge (going beyond academic research to engage and share research with stakeholders and getting feedback) 3. Knowledge utilisation (use of information from the learning alliance to develop her research work)
9B	Category 3	<ol style="list-style-type: none"> 1. Knowledge generation (generation of knowledge through interaction with different stakeholder groups.) 2. Knowledge sharing (LA as a repository of knowledge from different areas) 3. Knowledge utilisation (use of information from learning alliance for future planning)
10B	Category 3	<ol style="list-style-type: none"> 1. knowledge acquisition (learning about greenroofs), 2. knowledge sharing and dissemination with his organisation and other stakeholder groups.

		3. development of new stakeholder relationships and a change in perception about researchers
11B	Category 5	1. knowledge generation and 2. knowledge sharing (felt the biggest contribution from SWITCH was the introduction of the City Water Tools which got the city stakeholders well engaged 3. Knowledge utilisation (use of city water tool developed by researchers and promoted through the platform to members)

These above listed experiences are further discussed in section 6.7.2. It is further noted that a lot of these learning experiences occur at the individual level. In addition, it is noted from the responses of stakeholders that partnership, collaboration and change in perspective about other stakeholders were experienced through the learning alliance.

6.7.2 Summary of Factors supporting and preventing Learning

This section identifies the factors that supported the learning experiences of stakeholders described in previous sections. It was noted that learning experiences in meetings were predominately tilted towards knowledge acquisition and knowledge sharing. This will be further explored in this section which will also assess the extent to which stakeholders made use of information and the factors that supported this process. As with the previous sections, specific experiences from Accra will be explored and subsequently contrasted with experiences from other cities. Two observations from the use of the tools described in the previous section that could be reflective of some form of learning among the stakeholders are:

- Changes in stakeholder knowledge and perceptions
- Changes in research approaches (discussed in chapter 7)

The change in perspectives of stakeholders noted in section 6.5.3 represents what is described by SLIM (2004a) as first order learning. This order of learning is defined simply as the learning that occurs when stakeholders change their points of view on an issue. In the SLIM Paper on social learning processes in catchment management and sustainable water use of water, it is argued that a change in point of view could lead to a change in stakeholder actions which is precipitated by the question of how to do things differently. This is further enhanced by second degree of learning in which learning is defined as a change in the rationale underlying the stakeholder actions. This, the paper notes, is

precipitated by a question on why the action is being taken and how it could be done differently. This can be representative of appreciative learning; this in a way can be linked to theories around reasoned action and planned behaviour where a change in the point of view of the stakeholder leads to a change in behaviour (or in this case adoption of IUWM principles or technologies). From the perspectives of stakeholders, we rather see a particular motivation running through: how the learning alliance helps them to improve personally and how to improve their work. In this case, the stakeholder motivation or rationale for further action is based mainly on how it contributes to his work. The question to ask here is whether the rational or motivation underlying stakeholder actions change and to further explore the role of individual interest and organisational or public interest and the critical factors that affect an individual's behaviour or change in behaviour. Based on interviews with the stakeholders it is seen that the underlying motivation towards change was always influenced by what would help them to improve their work. In addition, the actions and view of stakeholders are largely determined by their current position within an organisation. Are they the decision makers or do they have the power to decide? Their motivation and decision even to attend meetings is influenced to a large extent by this view of individual self and public self. For some stakeholders their organisations were interested in learning and it was noted that different individuals interviewed presented a similar view about learning (e.g. Linda and George, section 6.6).

At the meetings, the cognitive aspect of individuals come into play where they learn information and adopt ideas for use (this is discussed in section 6.6.3). This is explained by individuals indicating whether they have been inspired to take up an action or not; or indicating that they had obtained knowledge that they found useful. Where individuals indicate that they had been inspired to take up an action, it becomes an intent/intention. The theory of reasoned action (TRA) requires the individuals to also have skills that will support their actions or allow them to take a particular action. External factors (organisation or resources) then lead to whether the action can take place.

Where individuals did not have organisations which required any response from them after participation in learning alliance meetings, the individuals' interests in learning were related to improving themselves.

According to Green (2007a), while it is seen that transaction costs are the easiest normative change, factors inspired by social norms are seen by Fishbein and Ajzen (1975), to play a

major role in determining individual intentions and attitudes. This is seen as the process where the LA becomes a feature/a norm in the water sector discourse and stakeholders see the learning alliance platform as a point where discussions could be made. In some ways, the legitimacy given by the stakeholders to the learning alliance becomes a grounding for why even though the LA is an informal setup, it begins to influence thinking within the water sector. Having the LA as an information feature also had its disadvantages. In some cases, particularly as the process started, it did not have a convening power beyond individual interests. This can to some extent explain the drop in stakeholder attendance after some time (see figure 6.1, in section 6.3.1). In an interview with Jane (DP Stakeholder from Accra), she points out that for the SWITCH partners, being at the meetings was part of their job and hence they were regular at meetings. The difference for her is that at a point, the convening power of the learning alliance was only based on people's interest. She felt that what the learning alliance platform lacked was having people come to the meeting because they had a real stake in the sense the learning alliance affected their programmes. Scoping should include a mechanism for embedding the interests of the organisations in the LA and making it relevant for workers of the organisations to become members of the LA. Where individuals have to be part of the LA out of their own personal interest, the transaction costs increase for them and become a disincentive in some ways. Where participation in the learning alliance is based on organisational interest, the transaction costs in some ways are borne by the organisation and this makes the individuals interested in attending the learning alliance meeting. As organisational interests in the learning alliance increased with the development of the RIDA, we noted not just improved attendance of the stakeholders (figure 6.1) but also the attendance of some key stakeholders who were the heads of their institutions. As compared to the earlier statement made regarding individual interests, since individual participation in learning alliance is driven by organisational interests, it is important as the learning alliance advances, to move from individual interests to address organisational interests. This maintains the convening power of the learning alliance since organisations will encourage individuals to attend meetings.

Stakeholders from a marginalised community (Teshie) saw a stake in the LA as an opportunity to get their voice heard and through that get to develop their area. That was their motivation and interest in attending the LA. Based on the usefulness of the learning alliance to them and the perceived benefits, the community members used their grassroots "power" bring in their then newly-appointed chief executive (in 2009) to be part of the LA meetings. This chief executive consistently participated in SWITCH meetings and used

some of the ideas in his municipal assembly. In addition, he also took part in various local and international SWITCH Programmes.

To some extent and given the time frame to begin to generate interest in stakeholders, it was difficult to mainstream the LA into organisations, or to have attendance at LA meetings as a mainstream activity for the organisations involved. In some ways it was noted that at the time of SWITCH there was no one learning alliance to which everyone went to, but each project had its own multi-stakeholder platform. With collaboration and with the setting up of a National Level learning alliance platform this trend changed and the national level learning alliance platform became a place where some projects if they could get a slot began to share their key findings. Even with that, there were still conflicts when organisations or other projects wanted to share their work and the learning alliance intended to undertake another programme. These are however managed through facilitation hence the need to still have adequate resources to maintain a relatively independent facilitator for the learning alliance process.

Incentives and Motivation for change

In stakeholder interactions during meetings, stakeholders often made reference to attitudinal changes and inability to enforce laws and regulations as being one of the fundamental challenges of the existing water management system in the city. This falls under governance issues. The role of the learning alliance in addressing this challenge is described. In terms of its contribution to governance, the learning alliances served as a mechanism for coordinating individual and collective behaviour (of learning alliance members and organisations) particularly in relation to information sharing.

Since this research assesses the extent to which a learning alliance can contribute to change, it is therefore necessary to understand some of the mechanics underlying change in stakeholder behaviour. I would argue that if learning is observed by a change in behaviour, the mechanisms that lead to a change in behaviour can be considered as factors of learning. Chapter 2 presented some key that gave some insight into what precipitates change in individual's attitudes and thinking. This relates to literature that points out that an individual has a private self and a public self: Fishbein-Ajzen (1975) note that an individual's behaviour is governed by intentions which are subject to the social norm (public self) and the individuals own perceptions about the behaviour. Green (2007) further identifies three groups of approaches that determine or influence behavioural shift:

- Changes that are targeted at the personal self
- Changes aimed at reducing transaction costs
- Changes that are focused on the public self

Beyond individual changes, there are collective changes that are noted as a result of the learning alliance process. As discussed in chapter 2, section 2.3.2, some indicators to test the kinds of learning and transformation that is seen within the SWITCH process include changes in relationships towards greater collaboration and interdependence of stakeholders. In addition the learning alliance provides a space for interaction and learning leading to the point where public goals.

- Change in relationships (moving from individualism and competition to interdependence and collaboration) – see how the stakeholders
- Space for interaction and learning together (explore literature on learning space)
- Development of routines and procedures
- the willingness of public administration to transfer responsibility for achieving public aims to the area-based interaction of stakeholders (role of mayors, ministry, World Bank) (PURC willing to give space for the pro-poor platform to support their work)

The fact that towards the end of the learning alliance, the stakeholder organisations were supportive of bearing the cost is identified in projects with a similar design. In SLIM (2004b), the investment costs were high at the beginning of the process which was to a larger extent stakeholder driven, while the benefits came later. This suggests that with time, the benefits that stakeholders will derive from the process of interactions will encourage them to contribute resources to the maintenance of the platform or space for interaction. This is opposed to a coercive process where stakeholders are forced together to participate in learning. This also suggests that even when stakeholders are brought together, the process of learning cannot be forced. This process can also be seen in the seeming lack of interest in the learning alliance from stakeholders as the numbers attending meetings went down after the first 2 years after the initial phase when there were no new results or information, but later came up after the 3-4th year when the benefits of being part of the learning alliance were clearer.

Also having an activity such as strategic planning of the stakeholders to work around underscores the point that simply meeting and interaction is not sufficient to induce learning and concerted action towards a given goal, but rather learning which leads to concerted action in enhanced by an activity that stakeholders can do together such as

visioning. This is similar to the setting up of a pro-poor platform for social inclusion in water supply which had the buy in of the different stakeholder groups including the regulator for water supply. Previously stakeholders had interacted with consultants and had been part of consultations for the development of projects and products but that did not lead to concerted action. However, the discussions around pro-poor issues led to the formation of a pro-poor platform supported by the regulator for water utilities.

In the literature review, we identify the “*willingness of public administration to transfer responsibility for achieving public aims to the area-based interaction of stakeholders*” as one of the indications of a learning process inducing concerted action and social transformations. Two experiences from Accra show how these work and are further discussed in the outcomes chapter 7.

In Birmingham we see a similar experience of having the learning alliance role in the Eastside study, their role in the contributing to the strategic planning process and BCC. In Belo Horizonte and in Lodz the municipalities become key players in the research as a result of their participation in the learning alliance process (Butterworth *et al*, 2011). This is indicative of trust in the platform and space created for interaction.

The time frame for the project and the research could not allow us to measure significant adaptations of technology as an outcome of social learning but from the demonstrations there were indications of acceptance by farmers who were part of the demonstration. In addition, there was acceptance of information provided by the learning alliance to key stakeholders.

6.7.3 Conclusion

The chapter presented the process of learning within the learning alliance. The chapter first explored the learning tools that were utilised in the process from inception to completion, followed by a narrative of stakeholder experiences. Different stakeholder experiences from different categories (researchers and research users, enthusiastic and sceptical) of stakeholders were examined. The different types of learning that emerged and underlying factors that influenced learning at the different levels were identified. From the data presented in this chapter and analysis, the learning alliance provided a platform for the generation and sharing of information, the creation of new networks and relationships, culminating in new knowledge in water management and a change in perceptions for

stakeholders who participated in the process. The process also provided for collective learning and collective decision making among stakeholders through the visioning and scenario planning exercises (outcomes related to this are further discussed in the next chapter). This highlights the need for the right tools for engagement in the learning alliance process to create a common ground for engagement. While not all stakeholders had a drastic change in attitude, the views expressed by all stakeholders interviewed indicated an underlying acceptance and value of the use of learning alliance as a common sharing platform. These views could be described as supportive of the learning alliance process even though some stakeholders could be described as sceptical from the beginning. Learning alliances could be said to provide an avenue for learning where there is a change in individuals as a result of interaction. This change has the potential to be part of a wider social discourse. The ability for the learning alliance to have an influence beyond the platform depends also on the individuals participating in the learning alliance. First, is their own space for learning and second, is the level of potential influence they have within their organisations.

Another issue that comes up is the transitioning and continuity of roles or members when changes are made within an organisation. In Birmingham, there were two instances, once where one LA member had to replace another member that left an organisation and the second instance when there was a change in role of coordinator of learning alliance. The question is how to ensure continued participation of learning alliance members who start the process. There are instances where there are transfers or change of work which will then require a new person to replace the one who was previously attending or participating in meetings. In such an instance when it cannot be helped and there needs to be a transition, a question that comes up is how a smooth transition can be made to ensure that the level of stakeholder engagement is not affected. Such cases emphasise the need for reporting back the participation in the learning alliance meetings and key decisions back to the stakeholder's organisation. This could ensure that there is sufficient information of the importance or need for the organisation's participation in the LA as well as the roles expected to be played by the particular person attending the meeting.

Similarly, in Accra there was a transitioning of roles but that took place right after the scoping. That to some extent had an influence on the direction of the learning alliance in terms of following through on the earlier concepts. Transitioning within the LA should be a managed process that allows to some extent the continuity of what has been started. The

difference between Accra and Birmingham is that the change in coordination roles involved the same organisation but different individuals whereas in Accra the change in coordination roles were moved from one organisation with a different interest and research direction to another organisation with different research themes and goals.

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7 Early Outcomes of the Learning Alliance Process and Influence of Power relations

7.1 Introduction

This chapter examines the early outcomes that occurred within the learning alliance by tracing cases from individual level to organizational level. This chapter examines the early outcomes relating to IUWM in the cities and how these outcomes emerged. An early outcome was expected to be changes in attitudes towards IUWM. Indicators of the extent to which change in IUWM occurs, are the extent of acceptance of IUWM and perhaps the adoption of IUWM technologies and the corresponding change in institutional set-ups. As noted above, transformation and learning is evidenced by acceptance and adoption of technologies and concepts in the longer term. The extent to which IUWM is adopted is, however, limited by the fact that the cities did not implement full scale IUWM or a full range of IUWM technologies, but rather aspects of IUWM perceived to be most applicable to their cities. The cities were involved in **IUWM strategic planning activities and implementation of demo activities**. Secondly, the process of adopting IUWM involves policies and strategies and given that policy making processes take a long time. IUWM cannot be fully achieved within the time frame of the project, which was also too short to measure long term outcomes that occur after the project. However, reference will be made to some indications of these where they arise.

The information and discussions presented in this chapter helps to answer Research Sub-Question 3.

Research Sub-Question 3: How do the social and institutional dynamics of urban water governance relate to innovation in urban water management?

This question assesses the early outcomes of the learning alliance and how it contributes to innovation and further identifies issues around governance and power relations. These outcomes will be explored under the following:

3a. What are the early outcomes of learning alliances?

3b. What is the influence of power relations and dynamics on the process of learning and how can this (power relations) be assessed/mapped? (outcomes of power relations).

The chapter concludes with a discussion on the findings and implications for practice. The sources of data used for this chapter are;

- Responses from stakeholders about learning and their experiences
- Observations made by researcher during the learning alliance process

7.2 What are the Outcomes to be explored?

The outcomes to be described in this chapter refer to learning outcomes observed in the stakeholders as a result of their participation in the learning alliance activities. The outcomes also refer to the changes noted in the learning alliance process and to some extent the wider urban water management sector within the cities studied. The outcomes discussed are linked to the research question on the extent to which the learning alliance acts as a mechanism to influence change and innovation in integrated urban water management. These are different from the specific deliverables and project outputs. Some of the project outcomes and deliverables however have a bearing on the learning outcomes and will be discussed in that context where appropriate. Some of these project outcomes have been discussed in previous chapters. Chapter 6 presented the following outcomes which resulted from the interaction of stakeholders within the learning alliance.

1. Sharing of information
2. Creation of new networks
3. Changes in stakeholder perceptions
4. Changes in research approaches

As indicated earlier, the expected outcomes from the learning alliance process relate to learning and innovation (chapter 2). These outcomes were expected to be seen through certain stakeholder behaviours which were discussed in chapter 2 (table 2.3).

Based on the outcomes explored, we will further examine the key lesson from the learning alliance process particularly relating to inputs required for setting up a learning alliance. These lessons are relevant in making recommendations for the setting up of a similar process for learning. In identifying the changes, outcomes will be explored according to the major project activities. The outcomes to be discussed in this chapter will therefore refer to the following:

- Outcomes relating to visioning and planning
- Outcomes from research and training activities

- Outcomes from City Demonstrations
- Outcomes from institutional experiences and interactions
- The influence of power relations and dynamics on the process of learning/innovation

7.3 What are the outcomes relating to visioning and planning?

In terms of information sharing, the learning alliance process in Accra, Birmingham and other SWITCH cities provided a mechanism for bringing together key stakeholders with access to data. These stakeholders in turn gave the information to the learning alliance members; including city planners and other stakeholders. Researchers also got the opportunity to use the data.

The learning alliance was also used as a tool to promote visioning and scenario planning. Both in Accra, in Birmingham and other cities, there was a process of scenario planning/ planning for future cities. The learning alliance agenda moved from just discussing technologies on IUWM, to planning for IUWM in the city of the future and implementing some demonstrations to test the technologies.

For city stakeholders a question that comes up is whether there were clear incentives for providing data to the learning alliance. These incentives are discussed in the section on stakeholder motivation as well as the learning experiences of stakeholders is discussed in section 6.5.1 and 6.5.2. At the start of the learning alliance, the incentives for providing information were not clearly defined. But with continued engagement and stakeholders developing an understanding of the use to which the researchers put the information, information was supplied to the researchers. The incentive was stakeholders being able to relate the information presented by the learning alliance researchers to their work.

Getting the right people involved in the learning alliance is important right from the onset as it increases the chances of changing the direction of the research. As one of the stakeholders put it, '*get the right stakeholders on board*'. Identifying the right stakeholders was done through tools such as the scoping, stakeholder analysis and institutional mapping. Beyond getting the right people involved, we had to deal with continuity of the stakeholders. Participation in meetings was varied and sometimes the person who attended the first meeting was different from the person who attended the second meeting. The learning alliance coordination and facilitation team attempted to deal with the issue of

continuity of participation through institutionalisation (a process whereby an institution formally recognises that being part of the learning alliance is important to their organisational mandate and agrees to participate through a letter of intent) and getting stakeholders to be nominated by their organisation. Samples of letters of intent were provided for the organisations and they were completed and returned to the learning alliance facilitator.

As noted from the onset of the learning alliance process, there were different interests among the different stakeholders – for instance, one of the differences that had to be dealt with on the platform was the issue of the long term strategic planning versus short term planning. In addition, researcher interests versus stakeholder interests also had to be dealt with on the platform. In line with the learning alliance becoming tool for long term strategic planning, one of the issues that had to be dealt with was the interests of the agencies involved in longer term planning, given the current pressures of providing facilities.

In the institutional review of the situation in Birmingham in UK, it was noted that there was a need for long term planning which was being done through the Birmingham Strategic Partnership (BSP). In Accra however, even though there are Medium term development plans (MTDP), there was limited interest in longer term planning given the current challenges that the assemblies had to deal with. One of the processes of the LA was persuading the assemblies to see the long-term visioning and scenario planning as being important for the needs of the city.

Persuading stakeholders to have a longer term view happened not only in Accra, but also in Birmingham. Issues such as flooding and cold winters did give an indication to Birmingham of the need for longer term planning. In an interview with one of the researchers on what led to the interest in longer term strategic planning in the city, he noted the change had to do with impacts of changes in weather that could have better been dealt with, which led the city to appreciate the need to better prepare to deal with future extreme events through strategic planning. He noted that dealing with the cold winters;

“...reinforced the view that this sort of thinking and planning could be done [i.e. referring to visioning and long-term planning]; it is important going forward”
Researcher, Birmingham.

For a city that is still developing such as Accra, the LA presented an opportunity to plan ahead and introduce IUWM technologies. For a place such as Birmingham that was already well developed, there were opportunities within regeneration projects for doing some retrofitting for an old city. An example is the work that was done in Eastside. A research user commented, “*How to think and apply SUDS; what you can retrofit sensibly; [I] talked about this in relation with the eastside when I was there (i.e. part of the LA meetings that looked at Eastside development).*”

7.3.1 Outcomes from Strategic Planning in Accra

A major deliverable of the strategic planning process was SWITCH Accra Strategic Planning Document. One of the aims of developing the strategic planning document was to consolidate some of the information on water management in the city of Accra. To ensure the validation of the information presented in the document, a series of stakeholder meetings and consultations were undertaken. The process of developing this deliverable and the deliverable in itself led to a number of stakeholder outcomes which are discussed in this section.

The role of the coordinator was also important in ensuring the credibility of the information. Concerning the quality of information obtained by stakeholders, this is a response from one of the learning alliance members; “*I have not had opportunity to interrogate quality thoroughly; I assume that so far as it is Esther and her students it is well done*” (Jack, Local Consultant and research user, Accra). Reference to one of the researchers in the process shows the potential role a trusted researcher could play in championing learning in the alliance. Jack (not his real name) is a consultant who took part in the learning alliance meeting where information about RIDA was shared with members. He indicated that information obtained from the learning alliance could be used to enhance his work as well as support arguments that one makes in reports and in other meetings. He notes instances where he was able to translate information from SWITCH meetings to other platforms. The following statements indicate how he describes these instances:

1st instance: I was writing a paper for NESSAP²⁹, [when] I came to the last SWITCH workshop, there was a slide that was presented and it gave very useful information to buttress a point that I was making in the NESSAP; immediately you come there, instead of having to do empirical research on your own, if such a research has already been done it is presented on the platform;

²⁹ National Environmental Sanitation Strategic Action Plan for Ghana

2nd Instance: “During the preparation of the Ghana compact (SWA³⁰) when we had to do the initial ministerial briefing, there was the initial push that priority for Water should be watered down since we were on our way to achieving the targets [referring to Ghana’s MDG targets for water]. But we all know that with the MDGs they are the floor not the ceiling and [even though] you are on your way to achieve it [MDGs], you might change the focus totally and end up losing track. There was a slide of [people] queuing for water. Just using the slides [alone], I was able to show that we are on target [towards MDGs] but if a household has to wake up at 4 am to queue – [it means] they have got the water, but they have to wait longer and to queue more. [This got them to maintain priority for water]. It is another point to show that research is useful”



Figure 7-1 Queuing to fetch water ³¹

3rd Instance: [The] slide on the prices of [water for] the different groups; you throw that in to show that people pay through their nose and not talking about the quality of water and the health issues.

³⁰ SWA is the sanitation and water for all compact which was signed between government and donors; it encouraged more commitment of financial resources towards the water sector. According the WSMP Ghana is on track to achieving the MDGs in water but not sanitation. This is the reference to the issues alluded to about watering down the commitment to development of water supply.

³¹ © K. B. Nyarko

Related Costs of water per m³

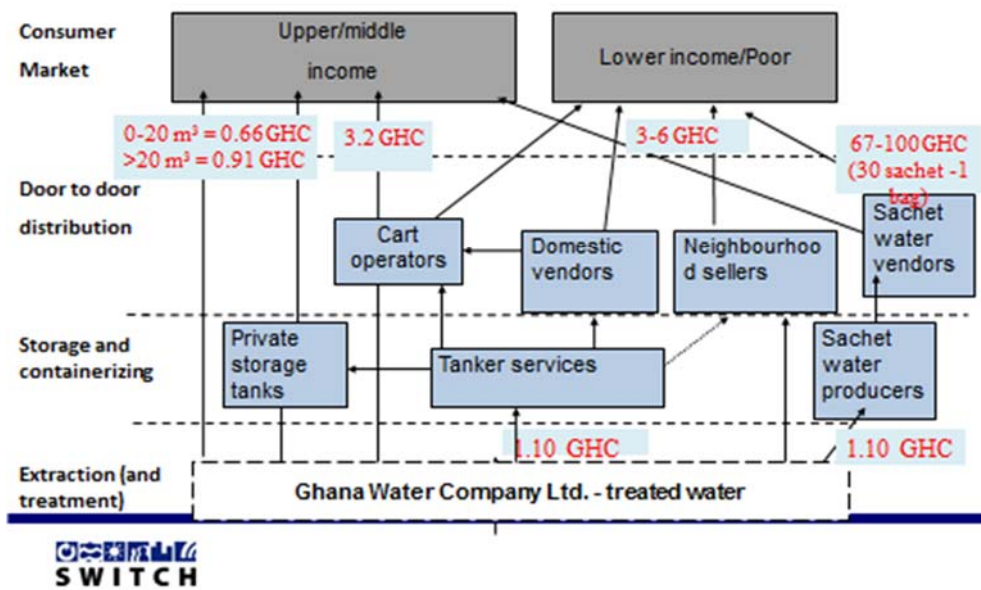


Figure 7-2 Slide presented at SWITCH LA meeting showing cost of water for different income groups in Accra³²

It would appear that he had analysed the slides and I had not even given them a second thought as a facilitator. In my mind I did not envisage how people would make use of it but he clearly demonstrated from the instances he referred to that he had been scrutinising the presentation and taking in the information presented. Not only did he make mention of the instances where he had used the information but also he further alludes to other instances where he could make use of information on the changing sanitation conditions when dealing with planners and estate developers. This use of information represents an indirect transfer of information from the learning alliance to stakeholders who were not part of the alliance.

I also noted the use of this particular slide on the cost of water for different groups being used by one of the stakeholders working for the water operator during a presentation in another sector meeting. As a facilitator, I felt more confident to talk about what the SWITCH project was about because we had figures to back the points that we made to stakeholders about urban water management in the city. Another stakeholder indicated that he made use of the RIDA document for a proposal for his company. This stakeholder who was in charge of planning during a follow up interview noted that the information was used

³² This slide shows that the low income group pays as much as 6 Ghana cedis for 1m³ of water which is about 10 times the amount paid by those in high income groups who have direct connection to water supply from the water company.

in what he described as a “subtle way” to influence decisions within his organisation and within the wider policy set up for water supply. Value of the RIDA; the company requested 100 copies of the documents to distribute to their staff members; this showed the importance and value that was placed on the document. This company had not participated in earlier LA meetings and as a practitioner in the water sector I did note comments about non-participation in other sector meetings; but this document provided a point of engagement with them and facilitated access to sectional heads. They participated in the policy forum and were a very welcome stakeholder during stakeholder discussions.

Another user of the product is the Assembly, which later asked for SWITCH support in the development of their strategic planning process; having seen the value of information provided by RIDA. They took note of SWITCH and RIDA work through the visit from the city coordinator to the Mayor and also through the facilitator’s presentation at one of the Donor-organised meetings on managing sanitation in Accra. A couple of letters were written to the SWITCH Project Coordinator to provide support for the Assembly in waste water management and for the development of the Medium Term Development Plan. An example is shown in Appendix 4.

By the end of the project, updates of the RIDA and other information on IUWM were shared regularly with the learning alliance members. This information was used in various ways by the learning alliance members. Having the information well documented and presented in ways that stakeholders could relate to also created access to key stakeholders for influence; SWITCH was invited to make presentations on RIDA at a National Level Learning Alliance meeting, at a donor forum for Greater Accra Metropolitan Area (GAMA) which was influenced by the publication. The use of GAMA to refer to Accra while it was not a SWITCH coinage became prominent and the meeting considered other assemblies outside of AMA (by using the RIDA adopted definition of GAMA). This resonates with the point made earlier about stakeholders calling for other assemblies to be invited during the 4th LA meeting. While the LA was not able to do extend to all assemblies within GAMA, the use of the LA document provided an opportunity for other assemblies to be considered in the planning for sanitation in Accra. As mentioned earlier, SWITCH was also invited by the AMA to support the development of the city strategic plan.

The development of RIDA and the influence it had, saw the learning alliance moving to a point where different stakeholder groups used it as a reference document. Stakeholders

initially did not have adequate up to date information, but moved to a situation where there was adequate information which was regularly shared among members, updated regularly and published in combination with the proposed strategic directions for IUWM as a book. In addition to the demonstration, the RIDA publication served as one of the concrete outputs of the SWITCH research and learning alliance in Accra. I also noted that other documents made reference to the SWITCH document. Through this document, the LA facilitator was also seen as a source of information and various researchers coming into the city of Accra were referred to her. Some recommendations from RIDA are being implemented in projects; an example is the recommendation for a master plan on integrated urban water management for the Greater Accra Metropolitan Area (GAMA). Referring to this contribution, James who could be described as sceptical (see section 6.5.1.3) was convinced of the contribution of the learning alliance.

“If you look at the RIDA that is what everyone will quote - it has brought everything together; it was not there previously”. (James, researcher)

Comparing the above point made by James to other city learning alliances, a similar point is noted from an interview with a researcher from Birmingham and Hamburg. He pointed out that it is important at the beginning of the learning alliance process for members to have some initial information (e.g. on research and innovations in IUWM) to get the learning alliance discussions going while research is designed.

The development of RIDA, apart from the information it gave to the stakeholders, provided information to support the proposed strategic directions and supported the analysis of options. It also provided information to other SWITCH researchers developing economic analysis, transition analysis and water supply analysis for the city. Another significant issue noted is that there was a sense of ownership from stakeholders regarding the plans proposed by visioning and scenario building processes. The development of the RIDA also helped participants to reflect better on the LA process and gave them a sense of being part of something useful. It gave participants the opportunity to ask for some stakeholders to be made a part of the discussion; e.g. other assemblies; policy makers. It allowed them to also reflect on the vision and make it clearer, more useful and refined.

At the end of the process, different stakeholders from different sectors saw the information provided by the RIDA as being important and in a sense the LA become the point from which sector players sought information.

Summary

In 2007 at the beginning of the learning alliance, there was general information available to the learning alliance members. This was based on generic information obtained from the initial scoping exercise and initial research. Comments about strategies were not based on figures, but on conjectures by LA members. Obtaining information from the stakeholders served as a point for acquisition of knowledge. This knowledge was packaged into information that was useful to stakeholders who made use of it for their personal development, their organisation and for policy influence. The RIDA exercise allowed the learning alliance to clearly delineate and quantify the challenges with water supply, sanitation and storm water management. These, coupled with the inability of the city authorities to adequately tackle rapid urbanisation and social inclusion in the city, provided a context for a process that began to focus on improving linkages between agencies and support the municipal authorities to move from a position of weak involvement in water services to a stronger level of engagement with the providers of services (e.g. the water company).

The need for an overarching structure that plans water supply, stormwater management and waste water management was identified. This structure would be involved in planning and then the implementing agencies can go ahead and implement while collaborating with each other. One of the suggestions that were proposed by the learning alliance was the need for a coordination platform that harmonises plans of the different stakeholders as well as a master plan for Integrated Urban Water Management.

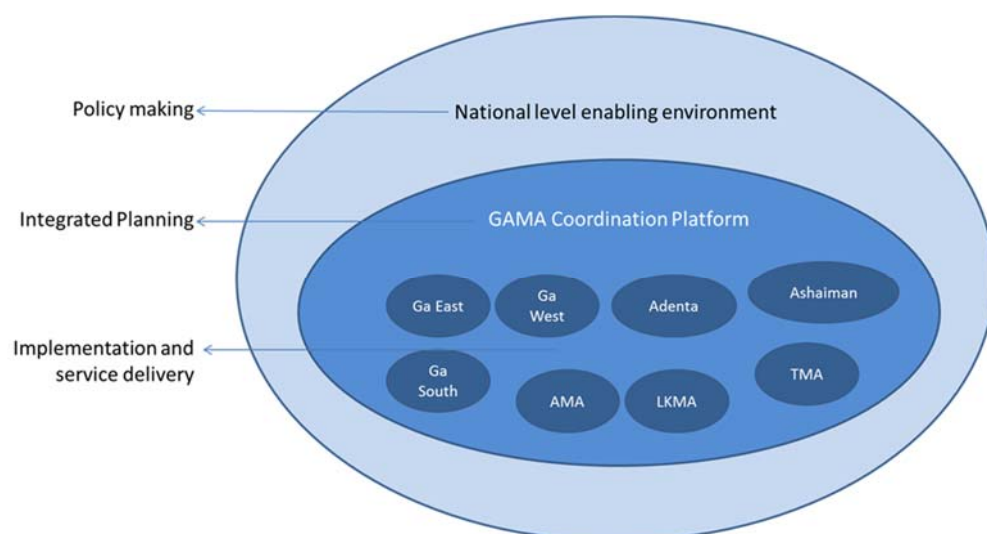


Figure 7-3 Planning and coordination platform proposed by Accra LA

An outcome of this proposition was the formation of a planning and coordination platform made up of these stakeholders in one of the donor projects (Currently this inter-MMA coordination mechanism is part of the World Bank sponsored Greater Accra Metropolitan Area (GAMA) Sanitation and Water project which is being implemented across 11 Metropolitan and Municipal Assemblies in GAMA 2013-2018). In addition, a masterplan is to be developed for the 11 assemblies as part of the project.

The suggestion for a coordination platform can be related to expected outcomes on change in the way urban water is managed, i.e. towards greater integration. While this outcome was not fully recognised during the time of the project; stakeholders regularly called for a coordination platform – they called for broadening participation (see notes from 4th LA meeting, Chapter 6). They also called for a coordination platform to bring together the activities of the different stakeholders to harmonise them. There was mixed participation of stakeholders both from horizontal and vertical levels (mostly middle level and low-level participation to high-level very busy stakeholders). Broadening the focus of the LA from an initial point of urban agriculture and waste water treatment focus³³, to water supply and institutional issues was also one of the changes that happened during the learning alliance. The learning alliance appeared to have a mind and a path of its own in contrast to the initial project design.

Another example of the gains made by the learning alliance in changing public perception was the promotion of urban agriculture and recovery of nutrients when there were public health concerns about vegetables and there was a general trend to try and stop the use of waste water for agriculture. This issue was tackled for example in Lima (Peru) and in Accra (Ghana) by the researchers. Sometimes the gains made by the learning alliance also depended on who was involved in the meetings at a particular time.

The progress made through the learning alliance activities is presented in table 7.1 below:

³³ The initial research areas for the Accra learning alliance were: Water Use for Urban Agriculture and Livelihoods; Use of Natural Systems for Waste Water Treatment; and Social Inclusion

Table 7-1 Progression of LA Activities, development of RIDA and corresponding influence on learning process

Timeline	Activity	Stage of LA and Output in relation to learning	Level of Stakeholder interactions
2007	Inception of Project 1 st LA meeting	There is very little information available on IUWM issues in Accra for LA members (information is limited to general issues)	Partial interaction
2007	2 nd LA meeting for visioning and scenario building process. End of the year learning and sharing workshop	Identifying the need for more information on the use of IUWM and the addition of new LA objective on information; knowledge generation	Joint discussion
2008;	LA meeting on strategic planning and Initiation of RIDA assessment; Development of ToR for strategic planning	There is limited and outdated information available to LA members; knowledge generation	Work planning together, initiation of collaborative research
2009;	sharing draft document with stakeholders at 4 th LA meeting	There is significant up-to-date information on issues of IUWM in Accra available to LA members; publication of a briefing note by the RCN, knowledge generation and knowledge sharing	Joint discussion, Systematic Learning with common vision
January 2010;	6 th LA meeting; finalising document with stakeholders and consolidation of strategic directions	There is significant up-to-date information on issues of IUWM in Accra available to LA members and other stakeholders in the water sector, knowledge sharing	Concerted Action
2010:	sharing with wider stakeholder groups at WB meeting, GWF, Mole Conference, SWITCH policy forum,	Data and information is shared regularly with LA members (including researchers and implementing organizations) and LA	Exerting Influence at scale through joint advocacy

Timeline	Activity	Stage of LA and Output in relation to learning	Level of Stakeholder interactions
		members contribute to the information database Data and information provided is used by LA members in their work and LA members give regular feedback to improve the information database; knowledge sharing, knowledge utilisation	
2011;	Final review and printing of RIDA document launching of RIDA document and presentation to stakeholders and stakeholder organisations	Knowledge sharing and knowledge utilisation	Exerting Influence at scale through joint advocacy

7.3.2 Visioning and Planning Outcomes in Birmingham

Even though there were some initial challenges with getting stakeholders on board the learning alliance process, a major outcome of the Visioning and scenario planning process in Birmingham is the influence of the city’s planning process. The stakeholder interviews indicated that the learning alliance process had to some extent increased the interest of stakeholders around planning for integrated urban water management. As noted in the previous chapter, the LA members defined a vision and identified various scenarios relating to the vision. They also had the opportunity to test these scenarios through the City Water Model. Testing the scenarios through the city water model increased their level of awareness and insights regarding an integrated approach to visioning and planning for urban water management. This section will further discuss the outcomes of the visioning process in relation to the experiences that the stakeholders had with the city water model. As discussed one of the outcomes of using the city water model with the stakeholders is that it provided opportunities for researchers to get access to important data which they had otherwise struggled to get from the beginning.

Another opportunity provided for planning came from the demonstration of green roofs and the linkage that was created for including green roofs in future models and urban regeneration through including it in the Eastside report. The report itself is a direct evidence of SWITCH influence in the planning activities of the city.

“the way we did make a difference was the work done on Eastside; changing how developers think.” (Researcher)

While there was evidence of the visioning process influencing the wider planning process in the city with regard to regeneration, use of green roofs and consideration of integrated urban water management, the challenges of maintaining continued stakeholder engagement around issues of planning were highlighted.

Even though most stakeholder groups were well engaged with the city water and visioning process, the city planners remained on the periphery of engagement. One reason could be the formal institutional framework and well as limitations from their organisational mandate which did not provide a lot of space for trying out models. There was also the challenge of the city planners having to develop short to medium term planning documents for their organisations and thus sometimes reducing the need for longer term modelling (while they may have a longer-term vision, the actual planning is done in phases – in Accra there is a 5-year medium term development plan even though there is a longer-term vision. Similarly, in Birmingham the short to medium term planning frame is 5-15 years. This situation brings a conflict of having to produce what is needed based on organisational mandate or a generic plan from SWITCH.

An interview with a stakeholder whose organisation contributes to city planning indicated

“SWITCH is looking at the future and councils are looking at a shorter time scale...we can embed into their framework and present opportunities that are available for use and adaptation such as green roofs. To deal with city council and planners you will have to suppose that they are speaking a foreign language to you, and you have to be able to speak their language.”

His statement suggests an initial dichotomy between the project objectives and city objectives and underscores the need for breaking barriers and creating linkages across the different groups. It also hinted about the need for some flexibility in the researchers to consider the stakeholder needs (see section on brokering) and have a better understanding of how the cities function and their planning horizons. This need for flexibility suggests the ability of the learning alliance (facilitator) to act as a translator- crossing different

languages or disciplines among the different stakeholders and researchers (discussed under brokering in section 7.7). It also highlights the power of the city planning authorities. The stakeholder however noted that there was still space for influencing the planners through organisations that make a contribution to the development of city plans.

“We get ideas into the council’s framework by doing risk assessments. ... We talk to them and help them to look at how climate change impacts on them and how do they prepare for it. In the same way we can look at water shortage, making an impact on decision making is about being able to embed (research) results, evidence based planning, and we write strategies for the city.” (Randy, Stakeholder in Birmingham learning alliance)

The conflicting situation of a project with a longer-term view and an existing system with a shorter-term view, shows how an already established system of doing things can limit some of the outcomes of the city water model. Even though the tendency was to look at short term planning, interviews with the stakeholders in Birmingham as well as coordinator and facilitator for the learning alliance platform in Birmingham showed that stakeholder perceptions were beginning to also consider longer term planning.

“...people[stakeholders] recognised that looking forward into the future 50 years is important rather than their constrained planning cycles, ... recognising that the longer term wins are important, not just the short term processes.”

The influence of LA on stakeholders in this regard show how the learning alliance could act as a mechanism for bringing different perspectives to stakeholders. Perhaps because planning for water and waste water, storm water management is not a direct core function of the city authority the interests were limited. Similarly, in Accra, the initial thinking to involve the city authorities (planners) as facilitators the learning alliance process raises question of whether the city authority is the right stakeholder to take the lead an IUWM process. A question to be asked when designing the stakeholder engagement process is who is the right person to bring on board or perhaps invest in. In order to understand better the needs and functions of the stakeholder organisations, the stakeholders need to be part of the engagement process. This is further discussed in section 7.9 which explores the inputs required.

Another outcome of the visioning process is that of the facilitators taking advantage of topical issues that came up to exert the SWITCH influence or ideas in the general discussions. As noted one of the points of influence was on flood management. The contribution of the project of issues of planning for the future is significant at the city level

even though at the national level it remained limited in its contribution, general reforms towards sustainability on the National agenda also meant that the LA/the project could make an impact

“In the first 3 years (of SWITCH) future proofing was not part of the agenda (of water issues in the UK). Now a lot of things are happening in the UK towards the future and water, there has been a general ground swell. It is difficult to say SWITCH was instrumental. SWITCH was sitting on a wave that would have come to shore anyway.”
Researcher, UK

There was also the recognition of SWITCH contribution to other long-term planning activities within the city. The coordinator for the project in Birmingham indicated the following:

“I think it (SWITCH) is helping with the approach that the BEP had taken with climate change to drive things through. They are using SWITCH information. It was useful because they weren't in existence at the start of SWITCH but they became aware of SWITCH 12 months ago and approached us to become involved. Climate change is a big driving factor and certainly with the national indicator they have to report on it gives it a high priority; these are often the issues that drive local authorities.”

7.4 What are the Outcomes from the research activities?

A key outcome noted from the learning alliance is the influence of stakeholders in the research activities through their participation in learning alliance meetings. While the project started with an initial idea that research will be demand-led, there were some limitations to the idea that the research will be changed to suit the needs of the users. Researchers had project deliverables that they had to meet. For research that was already far advanced or well defined before the learning alliances, it was difficult to make massive changes. It was recognised from the inception of the project that while some WPs had room for ‘identification’, others could only ‘fine-tune’ or adjust their proposed research. As noted by one of the EU-based researchers, some of the research that had been identified and was being done was already “locked into place” before engagement with the learning alliance. He however notes that they as researchers would have been happy to change research direction and begin to implement ideas that came in from the LA but sometimes the need to deliver on objectives that were set at the beginning of the project conflicted with their desire to change. The views expressed indicate the need for a more flexible project design when the use of a learning alliance process is intended. This EU-based researcher however noted that while it was important to work with the learning alliance, there is the need to provide some information at the onset to generate interest in the research from the learning alliance members.

A delicate balance is required between advancing research in parallel with the learning alliance process or starting the research at a later time, but having enough information to stimulate the interest of learning alliance members in research. The design of demonstrations was not well advanced in all the cities. For cities where the design of the research was well advanced, the demonstrations went on following business as usual but through the learning alliance, regular engagement was done with the stakeholders to get them to take interest in the demonstrations. Stakeholder experiences with demonstrations are discussed in section 7.6. For cities where the design of the demonstrations was not far advanced, the learning alliance process offered the opportunity for the stakeholders to be part of the research and design. An example is Accra, which presented a case where urban agriculture demonstrations were designed together with the learning alliance (refer to chapter 6). In the respective SWITCH demo cities, the leaders of the learning alliance or the initiators were based on the SWITCH partners in the city. In some cases, they were Researchers, in other cases, they were members of the city authorities or consultants. In most cities, the learning alliance had a coordinator (mostly researchers) and a facilitator. In most cases the facilitators were not necessarily undertaking ‘technical or scientific’ research work even though some of them were brought on board to work with the research institutions. The researchers who acted as coordinators in most cities were well-respected members of the scientific community and the respect they had made them natural champions of the learning alliance process in the cities. Their influences were exploited to bring in key members of stakeholders to be part of the learning alliance.

The influence of information on the stakeholders learning and decisions show that the information obtained from the learning alliance played a key role in shaping or reshaping the activities of the research. This can be linked to the role of information in shaping actions as discussed under section on theory for reasoned action in chapter 2. The next two subsections indicate how research approaches were affected by the learning alliance process.

7.4.1.1 Changes to Research Approaches in Accra

Research for the project had been pre-defined before the learning alliance started and there was not much space for the learning alliance to influence the research. However, in some instances, for example in Accra, the action research nature of the demonstration allowed for stakeholders to make input to the direction of the research.

At the onset of the learning alliance, it was expected that further themes will be identified and brought on board by the learning alliance but bringing on additional themes was not fully realised. As a result, the learning alliance focused mainly on the research areas that had been assigned prior to the beginning of the project. As the process moved on however, issues related to theme 4 (on faecal sludge management and, ecological sanitation came up – ecological sanitation is to some extent related to urine demonstration that was undertaken in Accra. In this regard, there was some collaboration between themes 4 and 5 in Accra even though at the beginning there was no direct activity on theme 4. Towards the end of the learning alliance for example, there was a training of Faecal sludge management that was organised for the members of the learning alliance based on interest and demand.).

The demonstration relied on the indigenous knowledge of stakeholders for its design and implementation. Stakeholders through their organisations supported with research facilities and laboratories; MoUs were signed to that effect. Discussions with the stakeholder groups and farmers influenced the progression of the demo and research around the demonstration. As part of the research around the demonstration, social inclusion studies were conducted and the results influenced the research. Interviews with stakeholders showed that activities undertaken had some influence on stakeholders who took part in the demo/meetings and these stakeholders had potential to influence other stakeholders they met. Researchers who worked on the project were also influenced to some extent by the process of engagement with stakeholders, as noted by Esther (chapter 6). Comparing the responses of stakeholders in Accra and stakeholders in other cities, mention was made of ‘seeds that have been sown’. This statement is recognition of the potential for information shared at the learning alliance to have a longer term and wider effect (can be linked to the goal of scaling up and out).

The ability of stakeholders to influence the research was based on the type of research that was to be done and the users of the research. Working with the different stakeholders and presenting the results of their research to stakeholders gave researchers a different way of thinking about the impact of their research and how they should go about their research. The researchers began to see a greater need for their research to have impact by ensuring that research was easily translated by the stakeholders. Their perspectives were also changed to understand that regular interaction with stakeholders was important to shaping and improving their research, although this perspective was not the view of all researchers (some of whom thought that research cannot be changed once it has been set up). Some

researchers went further to accept that it is important to include the public before the research is set up.

It was recognised at the initial stages of setting up the learning alliance in Accra that the work done by the other WPs such as 3.1 on water demand management (WDM) could be used to generate interest among stakeholders in the LA (section 5.4.5), the practical realisation of getting workpackage 3.1 to be part of the LA was difficult given that these other workpackages did not have the mandate to work in the city. However, there were some researchers in the workpackage on demand management who used Accra for their studies, but they were not part of the main LA meetings and some of this information could not be directly shared with the LA members during meetings. These studies were mainly MSc studies that were conducted alongside the learning alliance. The facilitator and coordinator however provided needed support and contacts among stakeholders that were needed for the provision of information.

The selected workpackages for the city were more related to the research interests of the partners more than the results of the initial scoping. This situation could be due to the fact that at the time of the initial scoping, the project deliverables and WPs had already been defined. This gap was recognised right at the initial scoping and it was noted that the project design had not been able to adequately accommodate all the priorities of the city stakeholders within project resources and research. What could have worked better for the project in wanting to take forward a process such as a learning alliance could have been the assessment of institutions and initial scoping before the commencement of the project and before the designation of work packages.

7.4.1.2 Changes in Research Approaches in Birmingham

There was not much scope for changes in the type of research to be done in Birmingham. Similarly, the demand-led aspect of the research was limited since it was based on researcher scoping and not the immediate interests of the learning alliance. As noted by the researchers, most of the research design was far advanced at the start of the learning alliance. Researchers in the city however, worked to accommodate the interests of stakeholders. For example, the researchers used research on the development of a city water to engage stakeholders around exchange of information. As noted, one of the main changes to the learning alliance activities in Birmingham following discussions with learning alliance members, was the work on Eastside. While it was not related to the

original research work, the Eastside scoping study provided an opportunity for the researchers and LA coordinators to modify their activities to accommodate a city goal of regeneration. This study also allowed the researchers to consider the role of their research and opportunities for uptake in regeneration projects. The research work around best management practices in sustainable stormwater management systems (Sustainable Urban Drainage Systems -SUDS) also provided the opportunity to discuss issues around storm water management (a major problem the city had to deal with following the flooding in 2007). These discussions raised the level of awareness among stakeholders about flooding issues. The learning alliance provided space to promote some of the SWITCH ideas around the SUDS and activities such as the Eastside provided space to include some of the ideas in longer term planning. This opportunity fits within the project logic of using the learning alliance process to provide a link between research and practitioners for uptake of innovation. The discussions around the research on storm water management were supported by the visioning and strategic planning to be discussed in the next section (7.4). The discussions also highlighted new areas of research that the researchers could explore. At this point, being able to conduct research around some of the issues that were raised during discussions could have provided an opportunity for demand led research, but the nature and financing mechanisms of the project meant that this opportunity could not be realised. Reflecting on this situation, one of the researchers reiterated that there should have been more space in the design to allow for learning alliance discussions from the beginning and then coming back to set up research some months after the learning alliance had started.

‘There is a conflict between the EU approach and the LA approach. It would have been good to say we will do this research for the first 18 months, and then the last months [of research] will be different from prior discussions and we will come up with ideas from the LA. 60% of the money could be held in a high interest account to support later developments suggested by the LA’.

While the researcher was not certain of how that alternate approach would work, he believed, it would have led to achieving more demand-led research. It can also be noted that while stakeholders did not ask for the specific research that was done, there was a demonstrable need for some of the research based on incidents such as the floods. In this regard, the research work in SWITCH provided information for influencing policy related to flood management through the work of researchers. A point of entry was through new policies and legislation that were aimed at improving flood management. This information could also be obtained from an exercise such as an institutional mapping or scoping

exercise (chapter 5) where stakeholder needs are considered before the design of research and not after the design of the research.

As the learning alliance moved on, there were some changes in the emphasis in the application of research and other expertise to bring about the desired direction of change within the city. There was engagement with the planning process (7.4.2) within the city and on formalising the concept of “transitioning” within the city.

The transitioning work was done by a SWITCH researcher and one of the aims was to develop transitioning as an integrating theme for SWITCH.

As noted from researcher Lily, her research work changed as the strategic planning activities progressed to consider transitioning towards more integrated urban water management. Transitioning work is also one of the changes that was done to the research in Birmingham and other cities. The work done on transitioning was influenced by existing policies which encouraged integrated planning for water management at the city level. The research on transitioning was also done in three other cities (Accra, Alexandria and Lodz). The work done within the transitioning framework featured as a major output of the SWITCH research work. The work done on transitioning indicated that Birmingham because of its high level of development faced the challenge of dealing with technology lock-in. This view was shared by some of the LA members interviewed, however it was noted that the benefit of the learning alliance was to bring in some new ideas into the city.

7.5 What are the Outcomes from City Demonstrations

7.5.1 Outcomes from Demonstrations in Accra

The action research process fulfilled one of the Learning Alliance objectives of involving marginalised groups. In an interview with the farmers at the end of the project, they indicated satisfaction at their level of involvement in the action research process as well as the learning alliance. The farmer whose plot was used for the demonstration on use of urine as fertilizer indicated that now people came to him for information.

The following are some of the responses given by the stakeholders regarding their involvement with the demo and lessons learnt.

Farmer BAF: “In terms of knowledge, I have seen that urine is a beneficial source; my idea in the past has changed. I can handle it. It has broadened my agricultural knowledge”

At the beginning of the project while the objective was to have stakeholders play a key role in the selection of demonstrations; the idea for a demonstration and the intended demonstration were to some extent defined at the conception of the project. However, through the learning alliance, discussions were initiated with key stakeholders regarding the direction the demonstration should proceed (a change from a position where the idea for a demonstration is initiated without significant discussion in the learning alliance). The specific demonstration activities that were to be undertaken were selected after a number of consultations with members of the learning alliance. They were a demo to treat water and improve on quality of water available to farmers; to recover nutrients from waste water for use by farmers – urine demo. There was first an initial training followed by a 2nd training and field surveys, studies and social inclusion survey and on-farm discussions with farmers. Stakeholders had an influence in the direction of the demo and in determining the criteria for the selection of demo sites. The plans for the demonstration became part of the learning alliance activities identified for the city and at every LA meeting, the progress of the demo was shared with the wider stakeholder group (sub group on sanitation worked on the demo). Learning alliance members played various roles during the implementation of the demonstration; the researchers in the group supported with the field surveys and studies. Other groups also supported with laboratory testing. Letters of support were given from the organisations to the leader of the research to show their commitment to the research process and to indicate the kind of support their institutions were willing to give. Learning alliance members maintained their interest in the demonstration activities. The following table (7.2) provides a progression of the demonstration and outputs related to learning.

Table 7-2 Progression of Action Research and demonstration

Timeline	Agenda Activity	Output relation in to learning	Level of Stakeholder interactions
1 st training (2007)	To identify and prioritise areas of need	Knowledge generation	
2 nd training (2007)	To define options for on-farm demonstration	Knowledge Generation/	Joint planning

	and identify sites for demo	Knowledge sharing	
Studies on social inclusion etc. (2007-2008)	Learning alliance members with potential to scale up demonstration activities pro-actively made suggestions and proposals that were addressed in demonstration plans	Knowledge Generation	Concerted action
Research and Field activities (2007-2010)	Learning alliance members maintain a keen interest in demonstration activities at all stages and report back against their initial commitments to scale-up interventions.	Knowledge generation/ knowledge sharing	Work planning together
Implementation of demonstration (2009 – 2010)		Knowledge utilisation/ knowledge sharing	Concerted action

The results of the demonstration increased stakeholder awareness on the use of waste water for urban agriculture in Accra. The results show that there was slight improvement in the quality of the water which was allowed to settle before being used. In addition, the farmers were taught how to water their plants in a manner to minimise contact of the waste water and the plant, thereby reducing the risk of contamination of farm produce – which was mainly fresh vegetables. The stakeholders were able to relate discussions in learning alliance meetings with actual implementation in the field. Demos also provided a basis for joint activities; joint planning and joint implementation by some of the stakeholders closely related to urban agriculture. It also made the broader stakeholder group who were not aware of urban agriculture more aware of it and increased their appreciation of urban agriculture issues. It got urban agriculture into discussions on national water sector platforms (e.g. Ghana Water Forum).

Other outcomes at the national level include the recognition of the farmer, whose plot was used for the demo on use of urine as fertiliser, as the greater Accra innovative farmer of the year. More research needed to be done to ensure that the right concentrations of urine were used at the right time. These were beyond the scope of the project and one of the project partners is taking this research forward through other projects. While there was a positive result in terms of the adoption of an innovation, it can be seen that to achieve a bigger impact more time and resources are needed. While recognition gives farmers satisfaction, their main concern or motive for adopting the innovation is that it should translate into better livelihood opportunities; higher yields and increased income.

7.5.2 Outcomes from Demonstrations in Birmingham

As noted by one of the researchers the difference between SWITCH and other projects that he had worked on was that the LA mechanism provided ways to share information more readily with stakeholders as the research was ongoing. There was feedback from the stakeholders back to the researchers. This discussion on the platform provided an opportunity for knowledge sharing between researchers and stakeholders, with the potential of influencing policy making. It also gave the stakeholders first hand opportunity to understand and engage researchers around their research activities.

“If it was not for SWITCH we would carry on development as usual. You need demo projects to push things in the right direction. They enable you to evaluate the benefits. Demo scaling up is important. You need demos to make people see that they work in practice and not only in theory.” (Jim, stakeholder in Birmingham LA)

The next subsections describe examples of how the stakeholders were engaged around demonstrations in Birmingham.

7.5.2.1 Green Roofs Experimentation

The main demonstration that was undertaken in Birmingham was the green roof demonstration. This demonstration was well received by stakeholders within the city. A number of field trips were organised for stakeholders and as noted earlier, the use of green roofs was made part of discussions around regeneration. An outcome relating to the impact of green roofs as reported from an interview with a stakeholder from the Environment Agency underscores the reason behind having key stakeholders from agencies with the mandate of delivering or taking up the innovations, being part of the learning alliance. This

individual saw himself as providing an opportunity for the uptake of innovation. Beyond the knowledge of the individual stakeholders in the alliances, there appeared to be an opportunity for making greater impact by inviting a wider group of stakeholders. As noted by a research user,

“it is useful to draw people from different angles together. There are a number of people pushing things like green roofs. They have the same target but for different reasons; if you see who your allies are you can put them together.”

As noted, based on the outcomes of the vision, this stakeholder was confident of the learning alliance process and believed the LA was at a point that the lessons learnt from the demonstration would be taken up by the stakeholders. This stakeholders’ response supports that idea of being able to harmonise and build synergy with other stakeholders with similar interests, to achieve better outcomes in terms of adoption of the technology. SWITCH has helped to support the development of strategic alliances within the city around opportunities for more integrated water management.

This stakeholder also saw himself as a point of information for Green roofs demonstration. He noted that whenever information was needed from the council regarding Green roofs, the council directed the information seeker to him. This experience showed how his active part in the learning alliance has made him a champion of the demo on green roof and has also made him a source of knowledge directing other people to get in touch with the researchers. This is an example of both researcher and LA members sharing research results alongside each other.

However, while the gains made in terms of introducing stakeholders and generating interest in the demos was high, there existed the practical challenge of adaptation which went beyond the learning alliance.

“It will take time for the outcome of the research to transfer into our practice – generally there is a challenge of getting research into use” (Research User, Birmingham).

As noted previously, the challenge with implementation is linked to existing institutional barriers which need to be recognised as part of the LA process.

The research user noted that getting different users to use the information obtained will require negotiation and also inclusion in the planning process. Coming from a regulator's point of view, a question that was posed was what if the use of green roofs became a requirement for developers. He however, noted that to get it into regulation or into a policy further information and good data coming from research was important. This is supportive of the idea of using research to support the learning alliance process where research provides data to validate the recommendations of a learning alliance process.

“I think green roofs are interesting and don't know when the reports will be available but hopefully they will give me an idea of whether you need a green roof policy – for example if we can say (i.e. to a developer) you are planning 14 floors, so we will give you 15 floors if you are planning to have a green roof – then everyone wins”. “We will also need better data to answer the questions about green roofs, like “does it prevent flooding? How much water does it hold up? Does it really clean up water?”

This implies that research results are important to the stakeholders and users of research. His statement indicates that the availability of credible data is what influences update and use of innovations. This is similar to assertions made by other research users, e.g. Jack from Accra on the use of information from the learning alliance (refer to section 7.4.1)

7.5.2.2 Research on natural systems and safe water reuse

This research work on rising polluted groundwater and virus mobility in aquifers was aimed at improving understanding of the groundwater biophysical and hydrological processes at critical interfaces. It was further expected that the results of the research would contribute to measures which reduce risks from pollution of surface streams by ground water and assist the identification of opportunities for safe future use of ground water resources. The expected user of the research was the Environment Agency.

During the initial stakeholder interviews during the first city assessment it was noted that the researchers were more enthusiastic than others about the relevance and potential use of the results of the research. At that time, the city stakeholders had not yet been fully engaged to understand the importance of the research.

However, follow up with the stakeholders during the second city assessment showed an increased level of interest from the stakeholder and a better appreciation of the possible uses and impact of the research. So while with time and continued engagement stakeholders become interested in research results, the opportunities for up take are still dependent on the existing institutional frameworks within which the stakeholders work.

This makes a case for the simultaneous attempt by the project (note: institutions are larger than the individuals who are part of the stakeholder meetings) to make an impact on a whole institutional set up – actors, governance discourse and actions- take time. Initial interviews with the researchers indicated that they were very positive about the relevance and potential applications of the research. The initial challenges were with getting the other stakeholders to become interested.

At the beginning the potential impact was not very clear to the research users. With time, the research users, particularly from the environmental regulator saw the need for the research; this shows that interest in research is influenced by the institutional agenda. However similar to the green roofs demonstrations, it was clear that the uptake and implementation was driven to a larger extent by other policies beyond individual recognition by stakeholders of the importance of the research. Even though the individual research user saw himself as playing a role in the uptake, the final decision and the application to which the outcomes will be applied was solely dependent on a larger organisational plan. As noted by one of the research users, some organisations have their own agenda to solve their “immediate problems” and apply their funds in that direction. As noted by the same research user, uptake of research is in itself a fragmented process. He gave the example of his company’s planning cycle which intends to look at the same issues within a 5-year period. In this sense it means that while researchers may be thinking ahead on some of the issues, the timing is out of sync with that the company’s goals and one of the key things is for learning alliances to explore further the future research required by companies and to link them or facilitate research users to see the linkages between their own research work and that of the learning alliance researchers. The research users however, indicated that the work done by the SWITCH researchers still has the potential to be picked up and used within 5 years. This goes to show that the uptake of research results may not be immediate, but will occur over a period.

7.5.2.3 City Water Model

The development of the city water model and the outcomes indicate the importance of being able to communicate the relevance of research to the users. The main researcher developing the city water model noted that from the initial stages, it was difficult to get the requisite information to support the development of the model from the water company which was expected to be one of the key users of the model. However, with time, the

company provided the needed data. This happened after further interaction. The researcher observed as follows:

“They were more interested once I demonstrated it, at the beginning you have nothing to demonstrate so you have nothing to show, the guys from [water company] were quite impressed with the waste water side when I presented it to them last summer.”

This underlies the importance of demonstrating research to stakeholders. Interviews with a research user from the company that provided the information, indicated that the company once they became interested was *“committed to make information available for the model”*. This was confirmed by the SWITCH coordinator, *“[the water company] at the City Water workshop, when they could see there would be a positive outcome and useful tools coming out of research, were committed to providing data to help with that.”*

The research user at the water company however noted that an initial challenge with understanding the model was that the model operated at a different scale than that of the company.

“We plan for Birmingham but it is planned as part of a bigger unit. The water model from SWITCH does not match what happens in the UK; here the city is not responsible for their own water.” Research user, Water Company

This comment is very similar to the situation in Accra where the city authorities noted that they were not in charge of planning for water supply in Accra. Secondly as mentioned, different boundaries overlap, regional³⁴ boundaries, the water company and the city authorities, and the catchment. This means that in designing an integrated programme it is important to explore more clearly the boundaries within which the model or research applies and seek to engage stakeholders at that level. However, the key thing was the interaction with stakeholders who came to appreciate the value of the model through regular interactions. Interviews with the city coordinators indicated that the model is one of the key outputs that the city may find useful.

“City Water will be the key thing [that SWITCH will have achieved in the city] if it will be available as a planning tool to help advise the city, to inform their future planning”. (SWITCH LA coordinator, Birmingham).

³⁴ The administrative boundaries of the Greater Accra Region for example are different from what that water company defines as regions; they have for example Accra East Region and Accra West Region, which do not exist administratively but exist in the operations and service domains of the water company and may cover more than one administrative region.

This observation was further confirmed by another research user from the regulator who noted the following:

“Potentially City Water is a great high up level planning tool for the City Authorities. It gives them a chance to play around bearing in mind what might happen in future. For example, if we can get useful data we can sit down with planners and see what effect green fields will give. They can see the outputs on whatever decisions are made and there is a basis on which to make every decision”. Research user, Birmingham.

While the outcome of the city water model appears to be positive, the process of engaging stakeholders and getting them to work together around the model is an indicator of how the learning alliance can bring about change, both at the individual level and organisational level. Some of the key outcomes discussed in this section relate to engaging stakeholders and raising their interests and awareness about a tool. It also involved changing the way researchers worked, for example Lily (a researcher) noted the following about her involvement in the research and development of the city model

“on a personal level I was interested in the wide range of stakeholder views; for [the experience with the water company], it is an eye-opener.I went to SWITCH meetings and it made me think of myself as being more traditional. You tend to be defensive...what is wrong with how we do this? It is good to have a source of challenge”

This shows how researchers were in a way far away from their research users. The researcher however noted a challenge which was that some learning alliance members still acted as individuals even though they were representatives from their respective companies. This links to earlier discussions about the line between individual interests and organisational interests. It was however noted that the stakeholders began to think of the role that could be played by their organisations as time went on and in a sense, there was a slight transition from individuals playing a role to the organisations working together. Lily’s research work on transitioning was briefly discussed in section 6.5.

Similar to Accra, the demonstrations provided an avenue for stakeholders to work together to shape research outcomes and to engage in joint decision making, planning and implementation

“There is thrust towards working together. [the water company] was involved in helping with the design of City Water, on the Waste Water Strategy side, providing information on the planning, water and waste water information from the models we use”, Research user, water company.

Table 7-3 Comparison of Action Research and Demonstrations Across cities

Demonstration	Lodz	Birmingham	Belo Horizonte	Accra	Lima
Type of demo	Natural systems – blue green River restoration and sludge reuse,	Green roofs – part of SUDS	Storm water management – SUDS infiltration, balancing ponds, wetland, and rain-water harvesting & gardens	Water for urban agriculture/ use of urine as fertiliser	Urban agriculture – waste-water treatment and use.
Involvement of stakeholders	High	Medium	Very high at local/community level	Mix of stakeholders at different levels. High level of involvement by few stakeholders in planning; high involvement of stakeholders at community level	High and structured (2 tiers) – National Level and community level
Embedding demos in broader intervention logic	High	High	High	High	Very high
Results:- Strength of feasibility Uptake – speed & scale of Institutionalisation of new approaches	Yes some – cost not explored Developers engaged Other rivers considered. Spatial plan for rivers, patented sedimentary pond,	Biodiversity aspect researched, costs\? Developers engaged	Early to assess? Interest, have laid a good basis for scaling up	Uptake of results by farmers LA members engaged to understand the use of “waste” water for urban agriculture Demonstration of low-cost treatment	Yes – more could be done on performance Ongoing interest expressed Inputs to international LA Already a mind-set change on the health

Demonstration	Lodz	Birmingham	Belo Horizonte	Accra	Lima
Maintenance of demos beyond switch Final papers on demos, including costs.	BG network in city plans, 4 new parks			systems for irrigation in urban agriculture	risk to re-use – now seen as a resource

7.6 What are the outcomes of Institutional Experiences with the Learning Alliance in Accra

Institutional experiences with the learning alliance remained largely informal, however the learning alliance was able to influence institutions from the bottom to the top. The influence was mainly through the provision of information and sharing of information. In this section, the experiences of three institutions and their engagement with the learning alliance are discussed. Two of the institutions (The regulator and the city authority) share a common characteristic; interest and enthusiasm in the learning alliance process. The third institution (the Water Company) was a peripheral participant but showed active interest when they began to see the results of the LA/ RIDA. They were also actively looking for solutions for particular challenges in their work. The LA was able to influence these institutions to the top level. In addition, the experiences of marginalised community members on the platform are discussed and analysed.

7.6.1 The Case of Regulator involvement in the LA

The role of the regulator in Accra is to ensure that service standards of the utility are observed and that the consumer is also protected. This is done through provision of guidelines, setting of tariff and performance monitoring of the utility. During the initial scoping exercise, the representatives of the regulator who was interviewed did not express any particular expectation of the learning alliance but identified some of the problems that could be discussed at the learning alliance meetings. These problems reflect their mandate. The problems identified by the representative of the regulator had to do with:

- The challenge of providing a social life line tariff for the poor in line with the PURC social policy. While this tariff was expected to provide reprieve for the poor, the representative noted that the poor were not able to benefit because they lived in compound, shared houses and thus their consumption rates appeared to be higher and they were being penalised for this. He suggested that the regulator was looking at non-tariff mechanisms and were interested to have several pro-poor pilots which would improve accessibility for the poor and also provide a profile of the poor areas to encourage proper planning of services to the poor.
- The representative also noted the challenges with losses in the ‘formal’ water supply network. He noted that this was due to a combination of both physical and commercial losses. SWITCH research that was conducted later indicated the losses were about 50% of the water produced.

- A third challenge noted by the representative had to do with tanker operations. As noted from the assessment of institutions above. Only 50% of the city is directly connected to the formal water supply system with the other 50% having to rely on the informal water supply system. Due to their informality and due to the fact that the water company found their activities disruptive, a number of tanker filling points had been closed down. This meant that tankers had to go longer distances to find water from an approved filling point thereby increasing the cost of water especially to the poor who have to rely on secondary and tertiary suppliers of water. The representative noted that it would be better to have more tanker filling points.
- He also noted that the water company lacked adequate funds for making capital investment in the needed water infrastructure. He further indicated that the regulator had an interest in water quality management.

These challenges identified by the regulator could be linked to the theme 6 area of research under SWITCH and in particular research under the social inclusion workpackage (6.3) that was to be undertaken in Accra. Based on their mandate and challenges expressed during the initial scoping it would appear that there was an interest for the regulator to become a part of the learning alliance. The regulator was one of the companies that was represented at the first stakeholder meeting to launch the SWITCH Project/ Learning alliance in Accra. The regulator sought to explore how the learning alliance could provide support for the some of the pro-poor initiatives of the regulator. Furthermore, the information from the learning alliance was reported by the head of section (in charge of water). All representatives of the regulator PURC were interviewed. Some of their responses will be discussed towards the end of this section. The LA team apart from the meetings, met with the regulator to explore how synergies could be built in relation to research in social inclusion around water supply. The meetings did provide some promising results, but due to constraints of the project, a specific demonstration was not undertaken in the area of water supply. An excerpt of some of the initial results is shown in this mail that was sent by one of the coordinators to the project manager.

Excerpt of letter sent by one of the research coordinators to brief the project manager on progress made in Accra with regards to possible demonstrations at the beginning of the SWITCH project

“Through this e-mail, I would like to update you on our progress to initiate a number of demonstration projects in Accra. However, before doing so I would like to highlight some of the problems that we have encountered during the development of these

demonstration projects. In Ghana, the water and sanitation sector is almost 90% dependent on donor funds hence is difficult to obtain the needed 65% match funding from local sources. At the same time, many donors are moving towards increased sector funding, basket funding, and sector coordination. The bottom line of all this, is that it is becoming increasingly difficult to mobilize funds locally. On a more positive note: we all feel that the planned demonstration activities and research activities in Accra are well integrated and are demand driven. For instance, all planned demonstration activities have social inclusion elements so as to ensure that the city for the future will be a city for all. Moreover, through the Learning Alliance we have developed good relationships with key local stakeholders.

At the moment there are several very promising (and in some cases confirmed) opportunities to initiate demonstration projects:

(parts of the letter are omitted)

The drinking water supply in poor urban areas is the main IUWM-related problem in Accra. The management contract between AVRIL and Ghana Water Company Ltd focuses on the improvement of the performance of the existing piped water supply system but does not seek to expand the service coverage. Therefore, the Public Utility Regulatory Commission (PURC) in Ghana is in the process of initiating three innovative community water supply projects to pilot approaches that seek to improve the water supply to the urban poor. PURC has approached SWITCH for support with the establishment of a community-based monitoring system. The main purpose of this monitoring system is to support a continuous learning process to develop approaches that that is needed to ensure a sustainable and affordable water supply for the poor through.

More detailed proposals for these demonstration activities will be prepared during the next few weeks but we would like to discuss these activities in person with you so as to get your feedback”.

The excerpts of the letter shown above suggests an initial institutional interest (based on discussions with the regulator) to have the learning alliance and SWITCH project provide support for a number of pro-poor projects that the regulator was interested in undertaking. However, due to the challenges of matching funding this monitoring activity could not be included in the research and learning alliance activities. The SWITCH partners in charge of leading the Social Inclusion research however worked with some of the members of the learning alliance through other project interests in Accra to start up the pro-poor platform. This pro-poor platform is aligned to directions that the regulator was trying to take in relation to social policy for improving access to the urban poor. Prior to the learning alliance, a study conducted by DFID (Nyarko *et al*, 2005) had recommended that the regulator take an active role in promoting agreement between stakeholders on the most appropriate pro-poor activities. Further recommendations had also been made for a special pro-poor unit to be set up and for various studies on pro-poor issues to be undertaken by the regulator. The research area on Social inclusion provided an avenue for engagement

with the regulator and as noted earlier there was an interest in working together on studies and possible pilots to improve pro-poor water interventions.

Through further interactions, the learning alliance played a key role in bringing together various projects working on pro-poor issues to see the need for a pro-poor coordination platform. This platform was then taken up and continued by one of the NGO stakeholders working closely with the regulator, the ministry and other learning alliance members. This pro-poor coordinating platform also had representation from the water company on some occasions and the meetings resulted in the development of some rules. My reflection on this is that good progress was made, considering how far the group had come within a couple of years. My observation however, looking back at the sector, is that similar units have been proposed by consultants hired by donors to improve the water sector. For example, with respect to the creation of a Pro-poor platform led by the Regulator, there was a similar recommendation based on earlier initiatives. The recommendation aimed at obtaining stakeholder involvement in developing arrangements to provide water supply service to low income areas, notably through the establishment of an Urban Low Income Working Unit (ULIGWU) and another Unit to monitor the provision of service to the urban poor. In the case of those earlier recommendations, the regulator was to take the lead in water sector stakeholder involvement in improving services for the urban poor.

When the learning alliance members came up with a similar proposal for a pro-poor platform (as opposed to a unit to deal with the urban poor), the initial thought was that establishing a pro-poor platform could be reinventing the wheel. To some extent, this showed a gap in institutional memory. Without much institutional memory, there is space for accepting new ideas instead of following old paths. However, without adequate institutional memory, LA members could come up with similar recommendations without for adequate reflection on the constraints as to why similar initiatives as ones that are proposed by LA meetings failed. But on further reflection, it could be noted that even though the ULIGWU was proposed as part of earlier initiatives, it was never realised due to a number of factors. The difference in what the learning alliance came up with is that it was not the suggestion of one consultant writing a report which may not be shared with stakeholders and where the stakeholder group that received the report may have put the report on the shelf, or may not have had the capacity at that time to implement the project. But what is seen is a group of learning alliance members proposing a process and then continuing to make it work over a period of more than a year, with learning alliance

members committing their own resources (time and funding) to be part of the process and then calling for the Ministry which was the original institution to have established the ULIGWU, to take ownership. The ministry responded positively and ensured that they were regularly represented at meetings. However, the activities of the pro-poor platform have not been continued by the ministry despite the initial interest. The inability to provide continued support for the pro-poor platform could be attributed to changes in the head of the water directorate and funding issues. Regular changes in the heads of institutions have caused some initiatives to be discontinued and explain why in some cases there appears to be limited institutional memory. The key issues and outcomes of the participation of the regulator are summed up below:

1. A key point that was noted at the beginning of the learning alliance was the limitations faced by formal institutions in getting an activity to take off. This was the result of inadequate resources and the bureaucratic challenges of working across different organisations. The LA provided an informal system which brought about some changes which had formally been recommended, but had not been implemented because of the above-mentioned challenges. While it is clear that a pro-poor unit was needed and proposed by a consultant, it was never actually started until stakeholders in the learning alliance began to have discussions around pro-poor interventions. The informal meetings then came up with suggestions and guidelines for formalising the platform (this also shows the transition from informal interactions to formalisation). However, when the process was formalised and handed to the Ministry the challenge of limited capacity affected the continuation of the pro-poor process.
2. Another point noted was that the route to implementing an action was shortened by the learning alliance process; stakeholders took up the issue of pro-poor coordination very easily and it was continued into the platform. Initially the social inclusion research group started meetings with the regulator who has a mandate for pro-poor projects. The regulator was in the process of coming up with a number of projects. SWITCH had hoped to build a partnership for learning around some of the projects but this could not be realised. However, the discussions highlighted the need for learning around pro-poor issues. There were meetings between the SWITCH partners and the regulator (meetings with researchers and SWITCH Partners, regulator and another local NGO was brought on board. The NGO had similar projects and partnership with IRC (SWITCH partner which led SWITCH workpackage 6 on learning alliances and social inclusion) and these discussions were carried across projects. The NGO had funding to

support the continued meeting of the pro-poor platform and the regulator was a very enthusiastic participant in meetings. All representatives that came from the regulator were very much interested in being part of such a process. They therefore played a key role in continuing the process. This demonstrates the ease with which ideas can be generated and taken up by learning alliance members.

3. Thirdly there was reduction in time and effort required for implementation; stakeholders through discussions were more disposed towards taking up innovation or changes that are created with stakeholder census and these have a greater chance of being implemented.

7.6.2 The Case of the City Authority involvement in the LA

The participation of the city authority is selected as a case because in the first instance the learning alliance was envisioned as a city alliance. As noted earlier in section 7.3.1.5, the city is a key stakeholder in Integrated Urban Water Management. Even though it does not play the decision-making role in water supply, it has responsibility for planning the city, waste water management and to some extent storm water management (i.e. responsibility for the maintenance of drains). The city authority also has an interest in public health and urban agriculture which are all key areas where the SWITCH project has interest. The city authority was therefore a key stakeholder to engage. This was evident in the initial scoping where it was noted that three different departments of the City authority were interviewed, reflecting the different roles played by the city authority in urban water management. During the first learning alliance meeting, the city authority alone had at least seven registered representatives for the different departments. They remained the organisation with the most representatives at various meetings.

Members of different units of the city indicated their interest in the learning alliance while pointing out issues of governance challenge, inadequate funding, inadequate coordination and a peripheral role in water and sanitation. These interests were linked to the SWITCH LA goal and thus in principle the assembly had an interest in being part of the learning alliance. During the initial scoping however, SWITCH researchers identified the Mayor as a potential influencer who and made recommendations for the mayor to be made a part of the learning alliance meetings. The mayor was part of the first learning alliance meeting but subsequent participation from the city authority remained at the level of the ‘technocrats’ in the assembly. However, with time, the LA moved from just engaging different individuals to engaging the mayor’s office directly. The engagement of the

mayor's office in some ways also highlights individual interests. In the first instance, the Mayor was in the third year of his tenure preparing for a general election; the space for change did not exist. When the second mayor came into office he was looking for ideas and opportunities to develop the city and was more open to ideas. Engaging with the mayor showed someone who was eager to solve the problems of the city and was quick to welcome initiatives in this direction. The further opportunity at the time was that there was concrete information and results to show the mayor in the form of the draft for the RIDA. The role of the Coordinator who was a champion in the process was also significant- as someone who was highly regarded in the sector, was highly placed and also knew some of the people who worked with the mayor. This gave an opening for the LA led by the coordinator to present the results that SWITCH had obtained so far to the mayor. Subsequently SWITCH was invited to make contributions to the Medium Term Development Plan of the Assembly (to include an IUWM goal) and also to provide technical advice with regard to waste water management which is the mandate of the assembly. A shortcoming of this relationship was that there was no demo in waste water management at the city level to propose to the mayor. However, SWITCH worked with other stakeholders e.g. Development partners by providing information to support their country strategies for improving waste water in the city. There is currently a project which is the result of 2-year consultative process with key stakeholders in Accra including the SWITCH project. The interest of the mayor in the SWITCH project also encouraged the LA members who were from the city authority office. The city authority paid for its workers to attend the 2nd training workshop. Engagement moved from a few individuals to the wider assembly. The AMA was a key participant in the LA. Members from the Waste Management Department, Metro Health Department, Planning Unit and AMA-MoFA were all part of the learning alliance. Interviews with these LA members indicated that they saw the LA as a good avenue for information and as a platform to improve their work and also interact with stakeholders whom they would otherwise have found difficult to engage outside the LA platform.

7.6.3 Involvement of the Water Company with the LA platform

The Water Company remained a very peripheral stakeholder during the learning alliance process. They participated in the first meeting but subsequently, they did not participate in the intermediate meetings, but took part in the final meeting. The level of the water company's involvement in the learning alliance process can be attributed to the fact that the LA came at the time of a management contract whereby the operations and

management of the water company had been sub-contracted to a private management company, AVRL Limited. The water company therefore initially saw no need to participate in meetings once the management company was taking part. This was confirmed with informal conversations with people in the water company. This situation was not only limited to the SWITCH learning alliance but also to other sector meetings. The water company remained a distant stakeholder while the private management company became a key stakeholder group that attended most of the meetings of the learning alliance. The private management company also provided a lot of the information that was needed for the RIDA with some of the information coming from the planning unit of the water company through the water directorate at the ministry.

The level of engagement with the water company however, was improved with the publication and sharing of findings from the LA meetings. The initial documents and findings were shared with some members of the water company who found the document useful for their planning and development of proposals. This opened a door for the SWITCH process to be seen as providing valuable information for the water company. Subsequently based on the role of SWITCH in providing information for the water sector and also in facilitating discussions around urban water management, the SWITCH facilitator played a key role in the discussions around the future of the water company and was invited to be part of the facilitation team for a public forum on the future of privatisation of water in Ghana. The facilitator also engaged with the water company through other sector meetings – particularly the Ghana Water Forum. At these meetings, further discussions were held with the water company about the initial results and outcomes of the SWITCH strategic planning process. Following the exit of the private management company in 2010 and with the water company looking for options for improving water supply and for managing the existing situation, engagement with the SWITCH learning alliance stakeholders increased. The discussions and conversations led to having the key management member of the water company participating in the SWITCH policy forum in 2010.

A key point of engagement was through the RIDA document and the results of the strategic directions developed with the members of the learning alliance provided information that the planning unit of the water company found useful. In line with that, the water company showed interest in having copies of the document for their staff and the top management of the water company participated in the Policy makers' forum. The path for engagement

for innovation with the water company was based on working around a material object – i.e. the strategic planning document. Recommendations made in the RIDA document for the development of a hydraulic model for the water company is now being implemented under a World Bank funded project. In addition, a low-income consumer unit has also been set up to cater for customers in low income areas. These can be linked to contributions from work done social inclusion as part of the SWITCH and some of the recommendations for the need to address the needs of the poor in the RIDA document.

The process of getting the Water Company in Accra to be involved in the LA process is similar to the process of getting the Water Company in Birmingham involved. In both cases, the involvement of the water company had to do with the LA getting results that the stakeholders perceived was useful for their work. In the case of Accra, the RIDA document provided a basis for engagement while in Birmingham (as seen from section 6.4.2 on city water tool development and use) the water company involvement increased when the results of the city water tool became available. The water company in Birmingham became more engaged and provided data for use in further development of the tool.

7.6.4 Case on marginalised involvement leading to key stakeholder involvement

This case of engaging another assembly and in turn the chief executive (Mayor) of the assembly presents a case where the Accra Learning Alliance accommodates changes in the local government structure as part of its approach to being an inclusive learning alliance. Unlike the Accra Assembly which is a bigger assembly and for which the Learning alliance had to persist over a period to get the attention of the chief executive, there was another assembly that took part in the learning alliances (both assembly members and the chief executive). The other assembly was part of the Accra Assembly at the inception of the SWITCH project, but it was later carved out to create a new assembly (Ledzokuku-Krowor Municipal Assembly – LEKMA). Because the assembly members had already been invited and were taking part in the initial SWITCH meetings, they were maintained as part of the learning alliance.

The chief executive of the smaller assembly can be described as very enthusiastic about learning and also interested in finding as much information as possible that will build the assembly. The LA did not set about deliberately to involve him in the LA process as was done for the mayor of Accra. The involvement of this second chief executive was through

the spontaneous action of the representatives of that community who were part of the learning alliance meeting. From the inception of the LA meeting, the members of the Teshie community were engaged through their assembly members. In 2009 when there was a change over in government and a new chief executive was appointed by the government, the people [assembly members] of Teshie invited their chief executive to the learning alliance meeting because they believed in the process of the learning alliance and felt included in the process. The community members further felt that the ideas and discussions towards integrated urban water management could help improve the water and sanitation situation in their community.

The result is that the chief executive embraced some ideas and innovation in integrated urban water management; e.g. rainwater harvesting and having porous pavements. The chief executive became a strong supporter of the learning alliance and through that developed links with the KNUST. Even though these were informal relations, it led to him supporting the trip of MSc students and the work of the student project being formulated around his city. He provided maps and supported the work of the masters students. These outcomes indicate a social and informal network created by the learning alliance and the impact that it can have -building social capital. The chief executive also met with researchers from KNUST and sought advice in storm water management and waste management. Though some of these ideas could not be taken further because the assembly itself lacks some resources – efforts were made by the facilitator to link him to on-going projects and other donor groups that were interested in implementing the idea (his assembly is part of the World Bank project that has been developed for GAMA). His network also expanded to include international players and he became a participant in some international SWITCH meetings (in Delft and Zaragoza). He participated actively in learning alliance meetings. Stakeholders found him approachable and made suggestions that any pilot or demonstration on water supply should take place in his community because they saw a lot of support for ideas coming from the LA and saw him as someone who could take innovation forward or easily adopt ideas. Having interacted with him and other politicians, the coordinator indicated that the interactions through the learning alliance gave her a different view about politicians.

The innovation path seen in this case is that empowering marginalised people brought in some of the political support needed and improved stakeholder interaction with politicians leading to a change in perspective of researchers about politicians. This means that

subsequently researchers may not be too worried about involving politicians in their work. Sometimes however, the challenge is with individual interests as well as organisational interest. Participation is also influenced to some extent by individual values and preferences.

Difficulties and challenges with implementing reforms have often been attributed to lack of funds and political will. This came up in several of the interviews where stakeholders questioned how the plans would be implemented. The other challenge is that some politicians are not in office for long, so while their involvement is critical it is often limited to their time in office.

Within Birmingham, the institutional set up did not provide much space for the engagement of marginalised groups. However, a significant involvement and impact was the involvement of the consumer council for water. In contrast to Accra, the CCW represented a more organised and representative forum for consumers to be engaged in the learning alliance. Questions about who serves the public interest were well answered through the role of the CCW in the learning alliance process.

7.7 What is the influence of power relations and dynamics on the process of learning/innovation

This section and the next section will explore the influence of power relationships and changes that occurred during the learning alliance. In chapter two, reference was made to the limitations of Multi-Stakeholder Platforms (MSPs). The limitations were first outlined in section 2.3.7 and are further discussed in this section drawing on the data and analysis of experiences within the learning alliance.

- Power relationships: a situation where there is an unbalanced power relationship where one stakeholder has more power than the other may lead to that stakeholder dominating the process and skewing discussions in their favour. Similarly marginalised stakeholders may feel excluded when participating in the platform which might hinder their continued participation in the LA process; for example, as noted in earlier chapters and also discussed further in the next chapter, given that the SWITCH project (and by extension the SWITCH researchers) convened the learning alliance, the project had a lot of influence in determining the initial research areas for the learning. This means that the stakeholders in the learning

alliance at the beginning were just participants. However, through deliberation and engagement in the learning alliance, it was noted that stakeholders, particularly in Accra, were able to shape the direction of the learning alliance.

- Platform composition – having a composition that is too diverse leads to a very wide focus of the platform; see section 5.4.1 on the institutional context (for example in Accra the platform was focused on urban agriculture, natural systems and social inclusion for water supply. These are across 3 different sectors and at the time of the learning alliance, spanned across 3 different ministries with different mandates and interests; when it came to representation of marginalised persons, the community members were interested in water while the farmers were interested in water for productive purposes); this may discourage some stakeholders from participating actively – e.g. The water company. Similarly having limited stakeholders may cause the platform to have a narrow focus; in this case it is important to balance the platform membership with competing interests. Existing institutional barriers may make the platform composition a limitation particularly when the composition is across different levels of governance. As noted in the previous section, there was limited participation from marginalised groups in the LA in Birmingham while in Accra there was participation from community members and farmers.
- Stakeholder representation and capacity to participate meaningfully in the debates; there is the need to have the right stakeholder representatives. In the case of the learning alliance, the representation on the learning alliance is related to the roles of the stakeholders in urban water management. This sometimes becomes a limitation where interest levels of the stakeholders are not high. Another challenge is where the organisational interest may be high in the learning alliance but the individuals representing the organisation have limited interest. In addition, the capacity to fully participate in debates sometimes depends on the position of the individual within the organisation. Stakeholders who have power and influence within their organisation are able to make stronger contributions while those who appear not to have power and influence (or those not in a high position) do not want to make contributions and commitments on behalf of their organisation. They may at best share their personal opinions but will often not want to appear as speaking for their organisations. This example is seen in the participation of the representatives of the city authority and also ministries, where stakeholders while

active participants in the meetings, were sometimes reluctant to make decisions for their respective organisations.

- Building on the previous point, it was noted that decision making and power mechanisms within the learning alliance is often at the informal level. Learning alliances or of the multi-stakeholder platforms may be able to get commitments and decisions made with relation to policy and other major decisions but this is limited to some extent, especially if the level of individuals participating is not at a very high level. It was noted from learning alliance meetings in both Accra and Birmingham that even though there was general consensus building around issues, it did not necessarily translate to changes at the organisational level. Often there was no formal commitment to decisions made. To deal with this situation, the Accra LA attempted to have letters of commitment and letters of intent from organisations that “officially” designated representatives to participate in meetings and report back to the organisations for feedback (see section 7.3 and Appendix 3). This issue of the level of influence of stakeholders is further discussed in chapter 8.
- The high costs of setting up an MSP; resources are needed to set up an MSP. This includes the cost of an initial scoping, cost of meetings and cost of facilitation. In both Accra and Birmingham as well as other SWITCH Cities, the project paid for the cost of initial activities as well as the time input for the facilitators. The issue of resources needed was discussed in section 6.7.2 and further elaborated in section 8.2. For the stakeholders who participate, there is also the cost of transportation (as was the example from Accra). Apart from actual monetary costs, there are transaction costs with regard to participation for stakeholders. Stakeholders must choose between which meetings to attend and which meetings have the most relevance with respect to the work that they do and which meetings their bosses will approve of. This is noted from discussions about stakeholder motivation for attending meetings, discussed in section 6.6.

This section discusses power relationships and subsequent sections will discuss outcomes around facilitation of stakeholder relationships (7.8 and 7.9) and the challenges with setting up the learning alliance (7.9). Various power relationships exist in a learning alliance, that have an influence on the process of learning or innovation. The power relationships exist across the different domains of innovation that were described in Chapter 5 (presented

schematically in figure 7.4 below). The power relations are within the domains (intra – i.e. among members of the same group or organisation) and inter (across different domains).

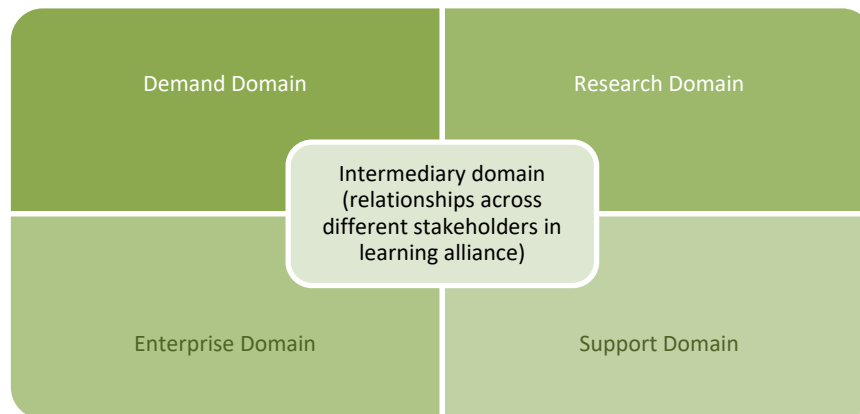


Figure 7-4 Domains of Innovation (based on Arnold and Bell, 2003) refer to 2.3.3 and 2.3.8

For this study, the following power relationships among the stakeholders involved in the learning alliance are considered and mapped:

- Relationship between researchers and project objectives/management (intra project power relationship)
- Relationship between researchers and stakeholders in the learning alliance/ The role of the project management in the learning alliance. (inter-stakeholder power relationships)
- Relationship among the different stakeholder groups (inter-organisational power relationship)
- Relationship between participants and their organisations (intra organisational power relationship)

These power relationships influenced the participation of the different kinds of stakeholders and also indirectly influenced their level of learning within the learning alliance. The first and perhaps most influential power relationship was that observed from the project side. As noted, while the process of learning alliance was expected to be demand-led, there were also expectations of project deliverables from the researchers. These project deliverables had been pre-determined at the onset of the project and budgeted for. This meant that while researchers agreed with some of the ideas coming from the learning alliance, they had to be more importantly committed to meeting their project

deliverables. They were more accountable to the project manager than the learning alliance.

Another outcome noted was that the initial idea of having the learning alliance as a self-organising group did not work too well. A main reason could be the fact that the learning alliance did not evolve on its own based on existing interaction with stakeholders but rather as an externally initiated idea that was 'sold' to stakeholders. In this regard, given that stakeholders had their own day jobs and responsibilities to deliver and since the learning alliance was not a "mainstreamed" part of their jobs or part of the sector within which they were working, it was difficult to expect stakeholders to make time and resource contributions towards the alliance from the outset. The influence of the stakeholder organisation was very strong in determining the actions of the stakeholders in relation to the learning alliance. I will further argue that even if stakeholders had on their own decided on starting up a learning alliance, it would still have required coordination of member activities. To start up and begin to move the agenda of IUWM to the cities therefore required facilitation to initiate the process and keep it running. Furthermore, the costs of bringing the stakeholders together needed to be borne from some source. This meant that the convener of the meetings played a pivotal role in keeping the learning alliance together and was viewed by the stakeholders as a rallying point for meetings. In some ways it made the convener of the meetings the "agenda setter" at the initial stages. So while the stage was created to ask stakeholders to contribute to setting a 'water and sanitation vision' for the city, the conveners (SWITCH Partners) still had a lot of power and influence in determining the activities and directions of the LA. In Accra, the stakeholders, based on previous experiences from other projects, also had an expectation that SWITCH would have its own agenda and tell the stakeholders what they wanted to do rather than ask stakeholders to plan together what to do. In some ways it appeared to stakeholders that the project was not serious or ready to implement a project. Also from the experience of having a lot of infrastructure related projects for which they are called to be informed but not be part of the key decision makers, stakeholders appeared confused about the process. They had to be facilitated to understand the role of the project and what they were expected to do. Even with that, they still "looked up" to the conveners to make decisions about the next steps for which they were happy to participate and make contributions. The dynamics of decision making in the learning alliance lay with the researchers and SWITCH project management. At each point, decision making about activities had to reflect the project objectives and be aligned to deliverables that were expected from the cities. The key

influence in the project in terms of what research was to be done was the researchers who had the budget.

Alongside the learning alliance process were the researchers who were required to work with the learning alliance continuously to undertake joint research. In reality the process of joint research was limited because all stakeholders had their own job requirements and the research, most of which had been started prior to establishment of the city LA, did not necessarily fit directly into the main jobs of the stakeholders. Even where the demonstration was decided with the stakeholders, it remained only as an aspect of their job to which they contributed. In this regard, the stakeholders still looked up to the researchers to provide information on the results of the research. City stakeholders made contributions to the evaluation and use of research results. They made possible suggestions on other research and demonstrations that could be done.

The researchers were however aligned to the deliverables of the project. The challenges were whether it was possible for researchers to use the project funds to go beyond the set objectives and follow the requests of the learning alliance members. There was therefore pressure on researchers to deliver project deliverables while trying to engage stakeholders who are required to deliver their own outputs in their respective organisations.

Other identifiable issues of power relations were the role of champions within the learning alliance. For example, the coordinators were champions in promoting the learning alliance because of their position as well-regarded practitioners in the sector. This high level of informal influence gave them a power of convening and the ability to get stakeholders into meetings. In this instance, the convening power of the coordinators is referring to their level of influence on the sector organisations rather than their formal authority within the sector. Clearly while the researchers and coordinators did not have formal authority over the sector players, they had a high level of influence (informal) because some of the sector players had been their students. Similarly, in Birmingham, the facilitator had influence on the stakeholders and this level of influence was used as leverage to encourage stakeholders to attend meetings. The convening power of the facilitator or facilitating institution is critical in starting up a learning alliance process. Apart from the convening power, the trust and respect that other organisations have for the convening institution is critical. Facilitators can also act as champions

The other power relation was the role of stakeholder groups and how they were able to relate to each other. Prior to the learning alliance there were some issues of trust and sometimes a “blame game” among stakeholders when it came to discussing challenges with water and sanitation. Within the platform, stakeholders formed relationships with each other and were able to see each other as partners. Beyond the learning alliance, stakeholders continued to interact and were able to build up further social capital based on the relationships initiated at the learning alliance meetings through other meetings. This outcome is discussed in the next section.

The outcome would be changes in power relations from the start of the project to the end. This could be a change in terms of:

1) how much power each stakeholder has (difficult to measure),

In terms of the learning alliance process itself; the power and influence to convene and organise meetings was held by the researchers and SWITCH Partners. This power was dependent on stakeholder interest in participation and availability of stakeholders to attend meetings. To achieve participation, the involvement of heads of institutions were very critical as they ensured the participation of their staff in meetings. Therefore, with time, there was increased engagement of the heads of various stakeholder institutions in addition to the direct engagement of stakeholders who participated in the LA meetings. In addition, the influence of researchers was also seen when it came to information sharing. The stakeholders had confidence in the information that was being shared and saw the researchers as reliable or legitimate sources of information. However, when it comes to the broader level of stakeholders, it was noted that the National Level stakeholders had the most influence when it comes to making policy influence within water (see section 5.2.4; also figures 5.1 and 5.2 spider diagrams). As also noted, donors and development partners had a substantial influence given that they provided funding for sector activities. While the level of donor influence was not affected by the learning alliance, the engagement of donors on the learning alliance ensured that some of the innovations and recommendations coming from the learning alliance could influence the country strategic plans for the various donors that fund the water and sanitation sector.

2) which stakeholders are more or less involved and influence the LA process

All stakeholders were influential in the learning alliance process, mostly based on their position in the water sector and also on the information they brought to the learning alliance set up. The researchers who provided a lot of information from their research were very influential in the process and the users of the information who provided validation for the information provided by the researchers also played a critical role in validating some of the information provided by the researchers. The facilitators played a role in shaping the discussions and engagement process and had to ensure that various stakeholder interests were considered during discussions.

3) changes in the nature of power dynamics and how power is being exercised – i.e. is there evidence of greater use of “influence” by a wider range of stakeholders based on negotiation, and less reliance on formal exercise of decision making as defined by statutes and policies?

While stakeholders were invited to be part of the learning alliance based on their position within the water and sanitation sector (i.e. based on individuals representing various organisations within the formal framework), within the learning alliance interactions were more informal and decisions based on consensus building. Stakeholders interacted in working groups and agreed on decisions to be made together and then shared with the larger learning alliance for consensus. When consensus was reached during the plenary and group feedback sessions, the stakeholders used to the result as a basis for decision making within the learning alliance. In this regard, all stakeholders had a role to play. For the researchers, the informal discussions within the learning alliance provided more information for researcher and also served as a process to validate the results of the research. The researchers also maintained a significant amount of influence in the learning alliance process.

7.8 Outcomes: mapping the strengthening of networks and “social capital”

Another key outcome of the learning alliance could be described as the creation of new networks and strengthening of existing but weak relationships. Interviews with stakeholders indicate the formation of new networks from the learning alliance meetings. Comparing the formation of new networks to the initial stages where not all stakeholders were connected, four stages of changes can be identified. This representation is based on

a consolidation of interviews with stakeholders on their experiences within the learning alliance.

- Stage 1: The relationships between stakeholders prior to the LA or at the inception of the learning alliance
- Stage 2: The relationship between stakeholder after the introduction of the learning alliance
- Stage 3: The relationship between stakeholders during the LA period
- Stage 4: The relationship between the stakeholders after the LA period.

Stage1: The relationship among stakeholders prior to the learning alliance was characterized by the situation where not all the stakeholders were connected. Others who were connected were characterized by a one - directional relationship. Based on stakeholder interviews, other apparent connections were identified based on the stakeholder roles, but though these apparent connections existed on paper, in reality there was limited interaction between those groups of stakeholders. The existing stakeholder relationship prior to the LA is illustrated in diagram 7.4. The diagrams are schematic representations generated from stakeholder interviews; institutional analysis and researchers experience and insight of existing institutions. The diagram also shows the path to information sharing and information dissemination was done through multiple steps. For example, if consumers wanted to connect to regulators they will had to go through a number of steps (3) to make the connection.

Stage 2: With the introduction of the learning alliance, the platform created by the meetings provided a space for interaction of stakeholders representing a bridge across all the stakeholder groups who were part of the learning alliance and at the same time reducing the connection steps for all stakeholders on the platform.

Stage 3: While the learning alliance process was ongoing. The relationships among the stakeholders developed such that they began to interact beyond the learning alliance meetings, and created their own forms of networks and other projects that they worked on together. This was for example indicated by stakeholders from the one of the regulatory agencies and also from one of the local authorities who indicated that they still interacted with the other stakeholders they had met in the learning alliance outside the formal setting of the learning alliance.

Stage 4: The period after the learning alliance. With the end of the project, there were no formal learning alliance meetings. But there still remains the group of people that were engaged around the LA process and relationships that have been formed which still remain. The formal end of the learning alliance does not change the relationships that have been created. Stakeholders continue with the relationships that have been built. This was noted from the interviews with stakeholders who indicated how they made use of the existing relationships to further move on to build new relationships for subsequent areas outside the learning alliance.

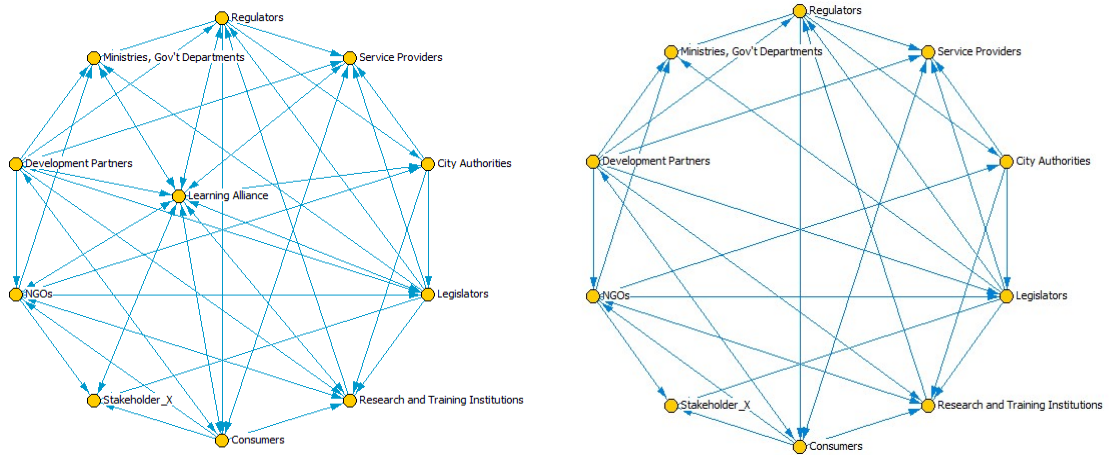
This shows that the LA acted as a catalyst to bring stakeholders together and the formal end of the LA at the end of the project does not change the stakeholder relationships that have been formed.

Figure 7-5 Progression of Stakeholder Relationship with Learning Alliance process



Stage 1 Stakeholder relations prior to LA

Stage 2 Stakeholder relations -early stage of LA



Stage 3 Stakeholder relations – advanced Stage 4: Stakeholder relations after LA
LA

The learning alliance did not start with connections to all the stakeholders. The learning alliance connections to the stakeholders were created after some time with the addition of new stakeholder groups. In terms of learning, the creation of the new networks provides an opportunity for interaction and exchange of information which lead to learning. In terms of innovations, the creation of the new networks through the learning alliance also reduce the pathways/agency for innovation in that the target for innovations get to be part of the development of that innovation or is part of the innovative process itself. As noted by the LA members they pick up information for use in their work from the LA and their interactions also expose them to information that they did not know before. Some also indicated that they were inspired to take up actions that they had not thought of doing before. These are all indications of the space for learning and uptake of innovation through the learning alliance.

This outcome is an example of new directions of innovation which is defined in terms of the result of collaborative processes rather than individual actions. According to Leeuwis (2004), coordinated action among a network of interdependent stakeholders resulting in collective achievement can be considered as innovation. They identify effective collaborations among the stakeholders as the key to the innovation that is achieved. Similarly, the formation of the networks within the LA led to the development of demonstration activities and visions for the cities involved in the learning alliance.

Another power relation considered is the participation of marginal groups and how they felt within the learning alliance. As noted from two marginalised groups; farmers and

community members, they were not hindered by their participation in the LA meetings and they felt that they were able to adequately participate in meetings. A number of on-farm meetings also enhanced the sense of importance of farmers. The farmers contributed to information used for the research and demonstration on urban agriculture and they were happy to provide information to the learning alliance and other stakeholders that went to visit them.

Beyond the learning alliance platform, the information was shared at the organisational level of the stakeholders who participated. Interviews with stakeholders indicated that some stakeholders reported back to their organisations. In terms of the power relations; there were varying levels of the stakeholders who attended the meetings. Some were at the top level management while most of the attendees were at the middle level management of their organisations. Stakeholders were asked how they felt they were able to influence their organisations and the nature of their feed back to their organisations was explored. The stakeholders felt that they had some level of influence on their organisations and thus were able to share information from the learning alliance by taking it back to their organisations.

7.9 Discussion

This chapter has presented the key outcomes related to the learning alliance in relation to identifying the dynamics of urban water governance related to innovation. It was noted that the learning process led to some innovations which in turn lead to change in governance and governance relations – which relations lead to a particular action. For example:

- relations between the community members that led to the participation of the chief executive (7.6.4)
- How RIDA led to the participation of the water company (7.6.3)
- Use of city water model to get interest from Water Company in Birmingham (7.5.2)
- Use of green roofs/use of LA to contribute to strategic planning in Birmingham (7.5.2)

It was noted that joint participation of the stakeholders brought about support for common decisions taken by learning alliance members (as against decisions made by one

stakeholder or consultant) (for example, the Pro-poor platform in Accra). Group members jointly supported the decisions that were taken.

Another outcome noted was the credibility of the information produced; having been provided and verified by stakeholders who are part of the learning alliance. Shared ownership of results was also noted among the participants, interviews with the learning alliance members who were outside the SWITCH consortium showed the use of the word “we” in referring to some of the decisions and outcomes of the learning alliance. The level of influence that stakeholders indicated the learning alliance could have, showed the level of legitimacy that the learning alliance was able to gain over the years. Further evidence of the legitimacy of the learning alliance is the fact that some stakeholders put the learning alliance on their CVs and some used their participation in the learning alliance as a means for promotion. This shows how they perceived the importance of the learning alliance within the sector. This represents an endorsement of the LA and gives legitimacy to the process.

As noted earlier, the platform provided credibility for decisions based on research, development of strategic directions. Stakeholders had confidence in the information coming from the researchers; the researchers are a well-respected group in the learning alliance. The researchers in the LA had a subtle influence on decisions.

The role of researchers in the process can therefore not be downplayed. The SWITCH researchers in some cities such as Accra and Birmingham were able to move away from the comfort of their academic environment to engage with key stakeholders in practice. While engaging with the stakeholders was largely dependent on the individual researcher’s interests it was evident that the platform provided by the LA provided a mechanism where researchers who did not even have prior experience of stakeholder engagement could be encouraged to take part in an action research process with city level stakeholders. Having researchers on board also supported the credibility of information as perceived by the stakeholders.

While the long-term outcome of the learning alliance was change, an immediate outcome that was noted from the onset was the use of the learning alliance first as a source of information and a medium exchange of information among learning alliance members; learning alliance members asked for copies of presentations from the meetings. As discussed earlier, to meet the demand, copies of meeting presentations were made available

to members on a CD. In addition, there were printed copies of presentations given to learning alliance members. The impact of giving out these materials to the learning alliance members was assessed as part of the evaluation after meetings. When asked what was most useful, participants often indicated that the materials and CDs were useful to them. Stakeholders also rated the content of the materials and presentations as being useful. Subsequently during interviews on stakeholder experience in the learning alliance those interviewed talked about seeing the learning alliance as a source of information. This forms a basis to expect the outcome of change based on information and learning.

In Accra, towards the end of the LA process when the Strategic Planning Document (which showed linkages between the available resources for water supply, sanitation and stormwater management, the infrastructure, the demand and access to these services) was packaged into a book and given to stakeholders, the information on resources infrastructure, demand and access was seen as very useful by most stakeholder groups. This showed the impact of strategies developed jointly with stakeholders (section 7.4.1). The strategic planning document also presented a clearer picture of the existing water and sanitation situation in the city (for stakeholders interested in quantities this actually put numbers to the problems and people could easily relate to it; it got the attention of most stakeholder groups); the city authorities, the water companies, NGOs and donor communities. Information from there could be used as the basis for decision making. The information provided in this document supported stakeholders in coming up with strategic directions for water management in the city. One of the conclusions or key recommendations was the creation of the coordination platform for governance issues in management. The relevance of this recommendation is its use in water and sanitation projects in the city.

The second part of this chapter discussed the role of power relations within a project. It was noted that this is key to managing the interests and for forging collaboration and maintaining interests of stakeholders. It was noted that some of the power relations were on equal footing such as relationships across different stakeholders while others had stronger power dynamics such as relationships between project management and researchers. The issue of managing power relations also highlighted the need for effective facilitation. Within the project, there were trained facilitators who were assigned to the process of engaging stakeholders. In order to manage relations, they spent time with the different stakeholders to build some level of trust with the stakeholders. With time, they

became recognised as brokers who could be trusted and stakeholders were comfortable to work with them. Another aspect of managing power relations to support the growth of the LA process, was the endorsement of key stakeholders after they saw some clear results coming in from the research. The endorsements by these key officials as well as the recognition created by the influential coordinators indicate the need for a driver or champion of the process. This driver or champion should have credibility across the different stakeholder groups. Making use of the international dimensions and platforms of the project also enhanced the interest of local stakeholders in the project. This was largely supported by the learning and sharing meetings.

Apart from issues relating to power relations, another issue that came up in section 7.8 is the design and project set up. It was noted that while the idea of having facilitators, facilitation teams and researchers to work with stakeholders was a good idea, it required some level of resources including financial. Contributions not only from the project but also from major stakeholders were important to keep the learning alliance process going. The influence from the city coordinators and their commitment to the process was also critical. The available funds and resources had an influence on the way the learning alliance went. The project design also impacted the operations and running of the LA.

7.10 Conclusions

This chapter explored the key early outcomes of the learning alliance process and also the role of power relations. The key outcomes noted from the learning alliance process were about sharing of information (leading to learning and innovation), creation of new networks (resulting from stakeholder interactions and collaboration, changes in stakeholder perceptions (based on participation in learning alliance and information obtained from learning alliances) and changes in research approaches (for researchers based on feedback from learning alliance members).

In terms of the influence of power relations; it was noted that most there was not too much variance in the levels of power among stakeholders within the learning alliance. The learning alliance served as an informal network within the water sector. Most of the stakeholders were mid-level management stakeholders within their organisations. Organisational influences were different. The national level organisations were perceived to have the most influence. The role of stakeholders with influence in the learning alliance was not necessarily to change the learning alliance but to ensure that decisions made at the

learning alliance could be carried to the highest level of policy making. Within the learning alliance itself, decisions were made through information sharing, validation of information and consensus building. The researchers had a significant level of influence given their command over the subject areas and the respect that the stakeholders had for them

A summary of the outcomes is presented in the following table (7.4), which is an update of table 2.3.

Table 7-4 Updated Governance framework for multi-stakeholder platforms

Level	Accra Learning Alliance	Birmingham Learning Alliance
<p>Context</p> <ul style="list-style-type: none"> • Actors • Arenas • Ambiences and interactive practices 	<p>The Learning alliance was largely driven by an “academic” institution “outside” the sector.</p> <p>An informal learning platform comprising different stakeholders from the formal water sector in Ghana with a few players from the agricultural sector (section 5.2.1 table 5.1). Includes farmers and community members who form part of marginalised groups. Limited participation of media and donors Donors are very influential in the sector</p> <p>The interest of stakeholders in being part of the learning alliance is by virtue of the role of their organisations in the water sector – regulators, implementers, service providers etc. Most stakeholders received invitation through their organisations.</p> <p>The initial commitment to the LA platform is based on ‘permission’ granted by their organisations. Farmers and community members were also invited to be part of the process since they were part of research for Urban Agriculture and Social inclusion respectively.</p> <p>Power relations and coordination were managed through facilitation</p>	<p>The Learning alliance was largely driven by a private sector institution closer to practitioners. This was done with support from academic institutions.</p> <p>Informal learning platform in a highly organised and formal setup. Has links with academia, industry, municipality, development organisations and civil society organisations. (Section 5.3.1, table 5.2)</p> <p>Limited participation of media and donors</p> <p>Interest in the learning alliance</p> <p>Interaction through meetings which is voluntarily attended by members of the platform once they have been informed.</p>

Level	Accra Learning Alliance	Birmingham Learning Alliance
Governance processes <ul style="list-style-type: none"> • Discourses • Practices • Specification of laws 	<p>Facilitated process: Mainly through meetings and discussions on integrated urban water management, water supply, sanitation, urban agriculture and storm water management. Also through joint demonstration project Visioning and scenario planning process Research and training activities Demonstration activities Stakeholder meetings and interactions</p> <p>Learning and innovative processes</p> <p>Facilitation provided a process by which stakeholders were engaged</p>	<p>Facilitated stakeholder interactions and engagement process Research Training Demonstration of green roofs</p> <p>Through learning and innovative processes</p> <p>Facilitation was one of the key process through which stakeholders, including researchers, were engaged to promote IUWM.</p>
Governance cultures <ul style="list-style-type: none"> • Accepted modes of governance • Embedded cultural values • Formal and informal structures 	<p>Sector interaction is often at the initiation of projects and donor-led initiatives. Facilitated discussions (role of research coordinators and city learning alliance facilitator) Joint learning from the different stakeholder groups. Both vertical and horizontal. Open discussion and dialogue as well as participation and sharing by all. Trust, respective of views from different participants</p> <p>Learning alliance as an informal structure working on the peripheries to bring about change in a governance system that allows informal institutions to function</p> <p>Building of trust among stakeholders The use of trust The role of researchers, drivers and champions</p>	<p>Facilitated discussions (role of research coordinators and city learning alliance facilitator)</p> <p>Facilitated discussions Trust, open sharing of information</p> <p>Learning alliance as an informal structure in a highly formalised system.</p> <p>There were local champions and drivers of the process.</p>

8 Lessons on Design, Implementation, Facilitation and Sustainability of Learning Alliances

8.1 Introduction

This chapter presents a synthesis of some key lessons on the design and implementation of learning alliances, based on the experiences from Accra and Birmingham. It also provides lessons regarding the key inputs for the implementation and sustainability of learning alliances. It looks at the learning alliance process from a project context (in this case the SWITCH project). The lessons provide an insight into what worked well regarding the design, facilitation and implementation of the learning alliance and provide some recommendations of what could work better or how differently learning alliances could be set up within a project context.

8.2 Inputs required to sustain multi-stakeholder process relating to IUWM

8.2.1 Project Design and Implementation

This section discusses the impact of project design on learning alliances given that multi-stakeholder platforms are often implemented within the context of projects. Analysis of responses from the stakeholder interviews highlights the need for a project design that takes into account actual circumstances on the ground.

In the implementation of learning alliances under the SWITCH project, the key research topics for the project were decided before the city learning alliances were established. The visioning and prioritisation of key areas of research by learning alliance members therefore took place after the research had started. This led to the LAs being platforms for sharing results from research in most instances. To some extent, the learning alliance members had the opportunity to influence the direction of the research and the learning alliance process in the cities. However, the funding for research and learning alliance activities were controlled from the project (researcher partners) rather than the learning alliances.

With regard to the visioning process, some stakeholders pointed out that given the long-term vision of the project for a city of the future, the time frame for implementing the project was too short. A further point was made that the model of integration for urban water management did not fit well with some of the city structures, though the learning

alliance had potential for bringing stakeholders together. Similar to Birmingham in the UK, Accra did not handle issues regarding water supply directly at the city authority level. In both cities, the water company was the most influential stakeholder.

“[The] Water model from SWITCH does not match what happens in UK; here, the city is not [directly] responsible for [supplying] their own water” (City Stakeholder)

For example, in Accra, different boundaries, centralisation and incomplete decentralisation; existing local challenges with sector fragmentation also impeded the idea of undertaking an integrated approach/an integrated project. The SWITCH model for water management was different from the situation on the ground.

Also issues with planning and coordination at the city level affected the implementation. There were other challenges with integration within the project itself with the learning alliance seemingly running parallel to research activities. As pointed out by one of the researchers:

“The potential capacity of the group was not well utilised” (External Researcher, J).

This observation was also reported by another city based researcher who indicated that:

There was divide in the consortium, the complementarity was not well utilised, [with different] groups doing their own thing” (Afia, Researcher).

Furthermore, in response to questions about the project design, one of the city researchers indicated the following:

“I have learned from the SWITCH project about partnership – the necessity for when bringing different disciplines the partnership needs to be well developed in the context of different points of views. There is the need to lay a solid foundation otherwise individuals will be going in different directions. There is also need to form a team and agree a clear direction right from the time of developing the project so implementation will not be a challenge...”

The project methodology was not well conceptualised – it [referring to the project] was supposed to be an integrated project but it was not well integrated. It was supposed to respond to the need of the city but in most cases it did not respond to the need. So there is a learning alliance with its priorities and there are researchers who are doing their priorities. (Afia, City-based Researcher)

Two key points can be crystallised from the points made by the researcher. The fact that the process was not as demand-responsive as it was intended to be. Secondly, the process

was not as integrated as intended. This means that while integration across the urban water management cycle was sought, researchers still ended up working in their own respective areas. The larger project management unit, recognising this situation made attempts to correct this by creating an integrator team and also by re-aligning and grouping some of the work packages. To some extent this increased the cooperation across the processes within the cities and also improved engagement between the city LA and the researchers. One of the highlights contributing to the integration process was the organisation of a city water summit which brought together various city teams including researchers, LA coordinators, facilitators and city level stakeholders. This summit gave the different players an understanding of the integration process. At this meeting, the process of transitioning was also highlighted and towards the end of the project, it became a key deliverable for some of the researchers (refer to chapter 6; researcher stories).

The examples described above highlight the need for a well-designed and coordinated process for learning alliances, in which stakeholders are engaged to work collaboratively.

8.2.2 Project Time frame

As indicated earlier, given the idea of a long-term vision for the cities and the time it took to set up and get the learning alliance going, there were some concerns about the time frame for the project. As noted in Chapter 4 which provides the project context, the SWITCH project was designed to last 5 years; most learning alliances started in the 2nd year of the project. This later start of learning alliances can be attributed to the logistical challenges of putting together and managing a complex project. While the learning alliances started in the 2nd year, the members started to become more deeply engaged towards 3rd year of the project. Perhaps the timing was too short for the stakeholders to appreciate the outcomes. Towards the end of the project, at the point when some of the key outcomes that stakeholders could appropriately appreciate were realised and where interest was being generated, the learning alliance come to an end and did not give much space for exploring how stakeholders take up the research results.

The experiences regarding the learning alliance described above are consistent with studies done by Creech and Ramji (2004) which considered a 10 year-plus analysis framework for the life cycle of a knowledge network process (see table 2.2 in section 2.3.2). The study indicates the first three years of a network as the formative phase where planning is done, resources are mobilised and stakeholders are selected for a learning process. It is at this

stage that stakeholders get to know each other and coordination systems are set up. Creech and Ramji (2004) further indicate that the growth phase of the learning alliance happens from the 4th to 6th years. It is at this stage that results begin to emerge. Similarly, in the SWITCH cities, it took a while to get stakeholders to get to know each other and build the trust needed to get the learning alliance going. It also took a while for results to emerge both from the engagement process of the learning alliance and also from the research. This is linked with the timing of the research and the phasing of the research.

One researcher noted that she would have started the research before the LA so she would have something to engage the LA members around. This idea of starting the research before the LA is linked with the concept of having some quick wins with the stakeholders from the beginning to keep their interest. Another researcher said he would have phased the research to have followed the LA so that he could have the opportunity to bring some of the ideas from the LA. Both process or ideas have merits and it goes to show the need for a balanced approach and perhaps better phasing of the process to allow adequate time for initial scoping and generation of demand driven actions, an initial visioning process and initial research to keep the discussions going then a 2nd phase where a higher level of action research could be done. A researcher user indicated that it was important to have a break to do some reflection and come back to improve the situation. The timing of the different interventions (research, setting up of LA and the demonstrations) could have been improved and there is the need to consider this in any multi-stakeholder approach. A more phased approach would be better, (go to stakeholders ask about their needs, indicate a future collaborative process, come back to design the research and engagement process with regular input from stakeholders then go back to them).

In line with the point of phasing and doing an initial scoping, it allows the project to be designed to suit the existing institutional setup within which the project will be implemented. As noted previously, the model of IUWM presented did not fit well with the institutional system of the cities. Unlike other places in Europe where the city authorities have greater control of the management of water supply and water resources, the City Authorities in Accra and Birmingham did not have the overall mandate to manage water resources and water supply in the city.

8.2.3 Resources for Stakeholder Engagement Processes

Sustaining a multi-stakeholder engagement is linked to maintaining the interest of stakeholders in being part of the process. It was noted from the interviews that the advertised topic for the learning alliance meetings communicated in the invitations to organisations were initially what caught their interest. However, with time, the stakeholders' interests and benefits from the process encouraged their participation in meetings. Participation in the process (meetings and activities) however, had some constraints. The previous sections identified some limitations on the functions of the learning alliance in SWITCH. The stakeholders interviewed discussed limitations related to resources; human, time and budget (see figure 6. 8, section 6.6.1).

Resources are a key part of a stakeholder process. Fayse (2006) mentions the cost of setting up and maintaining the MSP as one of the main pitfalls of an MSP process. Funding is required to initiate the process, convene meetings and facilitate stakeholder engagement. Maintaining a facilitation team, development and dissemination of knowledge products from the learning alliances also requires funding. It was originally envisaged that stakeholders from the cities would contribute to the running of the learning alliance (discussed further in this section). Stakeholder interviews showed that resource constraints were some of the challenges that affected the learning alliance. Within the project, there were some funding challenges regarding the setting up of the learning alliances in terms of budgets from which to pay costs related to meetings and limited time input for staff on learning alliance activities (e.g. some facilitators and coordinators had an allocation of 3 days a month). This limited time input to some extent initially limited the capacity of some coordinators and facilitators to engage with the stakeholders effectively. At the initial stages most of the project funding was allocated towards research with the assumption that city stakeholders will naturally have an interest in funding the stakeholder engagement process. The facilitation of the project and the operations of the LA did not therefore initially have a budget and this had to come in later.

One of the initial objectives, that was changed, was the objective for the learning alliance to raise funds; **LA Objective 11: Resources (in-kind and cash) are levered as a result of working in partnerships**

Based on objective 11 mentioned above, it was envisaged that possible Indicators could include leverage of other partners activities, resources etc: the ultimate goal was to move

from a point where there were no inputs from outside the SWITCH project supporting learning alliance activities (apart from required matching funds of consortium partners) are (score 0) to get to a point where Commitments have been secured from participating stakeholder organisations for 100% of future learning alliance costs, include costs of facilitation (score 100).

At the beginning of the project, there was no specific budget line for the development and facilitation of learning alliances in the demo city.

“The only problem was that we looked at what would it take to do the LA. At the end of the scoping, we also started looking at resources; human and financial resources and what is needed to facilitate the LAs and then we noticed there was no budget within SWITCH - which seemed very strange because the whole idea had been sold on the LA and people had said from the EU side that this is what sold the project. But then we found out there was no money; no resources or time; apparently; from our perspective a lot of the money that was allocated under SWITCH; huge project money but spread thinly over 31 organisations in 9-10 cities. Moneys had been allocated to small bits and pieces of research; MSc studies, PhD studies and very little has been allocated to facilitate. At least some little money had been allocated to facilitate the learning alliance. No money actually allocated to doing them” [referring to other processes such as meetings, communication, process documentation]. “I remember at the time of the time of the scoping ; Lewis didn’t seem to understand the problem or underestimate it; so we made a list and said what do we need?; meetings; preparations; facilitator; documentation; Lewis kept saying this should come from the stakeholders; that is all very well but it is very difficult to ask stakeholders who have no clue of what the LA will be about to do it; in the long run u can ask them but initially u have to [start it up yourself]” Marylyn (external SWITCH Consortium)

The issue of resources is also pointed out by a city researcher who indicated that:

“At the city level the LAs could have done with enough measures for their operation and enough budget to facilitate the LA – to allow the members to move around”.

Learning alliance activities thus needed to be allocated some funding from other budgets linked to specific project deliverables. This reallocation of funds was done and some initial funds were provided in 2007 by the project management for the establishment of city learning alliances.

With this, LA objective 11 was reconsidered. While it was still considered a desired objective, it was not a key required objective. The objectives were reduced from 11 to 4 main objectives that cut across cities with additional objectives for each city based on the vision and directions in which the learning alliances intended to move.

Secondly the feasibility of having demand driven research from the city level was limited due to unavailability of resources. Having these resources already assigned to particular deliverables and outputs did not provide a lot of opportunity to respond to stakeholder requests that came during the implementation of the learning alliance and thus did not promote the aspect of the project that sought to promote demand driven research. This is linked to the funder demands and requirements of having clear outputs and deliverables for project implementation stated in the initial proposal.

The limitations imposed by the rules of the donor also played a role in limiting the implementation of the project concepts and did not give a lot of space for the project concepts to be well tested. Resources therefore play a critical role in who has power and influence. In cities without resources, the power often lies with the providers of the resources (mainly development partners who provide funds for investments in projects and infrastructure. In Birmingham, we do not visibly see a lot of external development partners at the city level. While the role of private developers and private sector groups are high in Birmingham, they are not very visible in the urban water management landscape of Accra, where private sector participation is still being developed.

8.2.4 Brokering and Managing Interests: bridging the gap between researchers and users

Another aspect of the project was getting research into use and promoting interactions between researchers and research users; bringing researchers out of their academic areas or ‘ivory tower’ into mainstream activities of the sector. One of the main objectives of the learning alliance was to achieve impact at scale - to scale up and out. The need for achieving wider impact was the reason for involving different levels of stakeholders from different organisations. From the beginning there was enthusiasm, but as time moved on there was an interest from stakeholders in getting concrete results. Particularly for city stakeholders they felt that seeing the real results of their discussions in the learning alliance provided more impetus and interest in being part of the learning alliance. However, there were times that it appeared to stakeholders that the research was slow when they (city stakeholders) were waiting for the results. This situation sometimes brought a challenge in sustaining the stakeholder interests while waiting for the results and might perhaps explain why in order to give the notion that stakeholders were involved in some activities, the LAs transitioned into strategic planning platforms at some point based on the project management direction and some researcher interest in that process. Learning alliance

facilitators then were required to support this process of developing strategic plans at the city level. For Accra the development of a strategic plan led to an output (a book on strategic directions towards IUWM) that was jointly owned by stakeholders.

Secondly, the issue of sustaining stakeholder interests while waiting for results makes a case for action research, where the stakeholders themselves are part of the research process. This experience gives a certain indication that is easier to promote products than concepts in the instance where stakeholders are more visual learners (refer to chapter 6 section 6.6.3). This is both a rationale and a challenge for social learning where concepts are shared and acquired through experiential learning. The process of action research and learning by doing as promoted by the learning alliance, balances the need for some stakeholders to see concrete actions in order to stimulate learning. In Kolbs (1984) modes of learning that are discussed in Chapter 2, we note that learning also needs to have a dimension of active experimentation and building of concrete experience and the learning alliance provided an opportunity for all the different modes.

The role of facilitation as envisaged by SWITCH was described briefly from chapter 5, in particular, the process of transforming researchers from the role of just ‘experts’ to active participants in a process of joint planning and decision making together with other stakeholders in the sector. In this case, the researchers acknowledge the role of stakeholders in achieving integrated urban water management. This is shown in figures 6.2 and 6.3 (page 147) where the process of learning was expected to transform researchers’ practice from just sharing information with stakeholders at the end of their research to researchers being ready to work with stakeholders in an action research setting. This engagement process means that the researchers who were part of learning alliance worked together with other stakeholders to do research while continuously sharing research. This outcome was one of the expectations of the SWITCH LA process.

Facilitators were trained at the beginning of the process on how to set up learning alliances. Facilitators were also trained in needed skills required for facilitation and as part of the LA process; there were yearly sharing activities where facilitator experiences were shared. Brokering and facilitation, being important inputs, are further discussed in the next section (8.3).

8.3 The Role of facilitation in sustaining the learning alliance process

Given that the objectives of learning for integrated water management involve stakeholders with varying interests, there is the need to facilitate the interests of the different stakeholders. As noted from section 7.8, there was a clear need to provide coordination across the different groups of researchers as well as other stakeholders. This issue of facilitation and coordination was also discussed in the section on managing power relations (7.8 and 8.2.4). The continued process of the learning alliance did not just emerge out of stakeholders with an interest to engage each other around a topic, but it was rather the process of a facilitated engagement as against an engagement that occurs on its own without a third party being involved. This section describes some of the mechanisms employed by facilitators to sustain stakeholder relationships and keep the learning alliance running. The activities of the facilitator included facilitation, communication, monitoring and evaluation and brokering of relationships.

The main activities of facilitators in the respective cities included process documentation, facilitation of engagements with different stakeholder groups, visits to stakeholders, participation in meetings, communication via email and via the website.

The process of the learning alliance also meant some trade-offs and the facilitation provided a means to carefully manage these trade-offs while keeping the interest of stakeholders. There were trade-offs in balancing researcher needs with the interests of stakeholders as well as the LA process as a whole; for example, researchers meeting their research objectives or project requirements, while at the same time attempting to provide stakeholders with relevant information. In this instance, there were “orchestrated pilots” that were started by the project, but at the same time, some “opportunity-driven” initiatives were identified and facilitators made use of these opportunities in the various cities to undertake activities to sustain the interest of stakeholders. An example is the Eastside study in Birmingham, where even though it was not originally part of the project, an opportunity presented itself and the facilitation team, together with researchers saw the need to develop a study to meet the needs of stakeholders. Similarly, in Accra, there was the development of RIDA which was seen as an opportunity to use the platform provided by the learning alliance to provide information to the city on integrated urban water management. Other cities also had various examples of facilitation of opportunities into activities of the learning alliance. These opportunity-driven initiatives taken up by facilitators in various cities underscore the need for a process of facilitation in learning alliances.

An example of an opportunity that was taken is explained in section 7.6 which explores the involvement of various institutions. The researchers and facilitation team took advantage of situations where stakeholders had discussions on their needs as well as existing opportunities which could be harnessed by the learning alliance. A key factor was based sometimes on where the facilitator or researchers were and which other person they met. Sometimes suggestions on what could be done were initiated at sector meetings and events. This shows the importance of having the facilitator also attend other meetings outside the learning alliance and also endorses the process of getting the facilitation team to communicate with the stakeholders outside the LA meetings. In Accra this sometimes involved visits to the offices of stakeholders. It is also worth noting that at the same time that the LA process was ongoing, there were various activities that were ongoing in the sector, some of which may not necessarily have worked to support the goals that the learning alliance was trying to achieve. An example is the separation of water supply and sewerage functions and their situation in different organisations. The critical aspect was the role of the facilitator in making the concept of IUWM and the learning alliance work even when the existing institutional setup had the potential to go against the flow.

An example of how the LA process clashes with the existing system was found in formal rules and structure of the water company and planning unit of the city authority in Accra: the water company has its own planning unit that plans for water supply infrastructure. This unit is separate from the planning unit of the assembly (City Authority). The planning functions for waste water have been given to the assembly; therefore, unless there is joint planning there is a disjoint between water supply and waste management which is not necessarily demonstrable of a best practice in integrating urban water management.

These two stakeholders were brought on board the learning alliance platform. Initially both stakeholders did not feel the need to be part of the platform but with continuous engagement and sharing of the results coming in the strategic planning process, both stakeholder groups became increasingly interested and deepened their involvement in the learning alliance platform. They began to participate in LA meetings and provided information for the preparation of the strategic planning documents. In addition, they were part of stakeholder validation workshops that discussed the findings and recommendations from the document and other research. With time and discussions on the platform, various stakeholders saw the need for coordination across different groups with different

organisational mandates and functions and called for a coordination platform (refer to section 7.3.1).

As the project progressed, sustaining the interest of stakeholders in the learning alliance process was very challenging especially when they did not immediately see the results of the research (which takes time) and also when they did not exactly see the outputs of the strategic planning document. As noted from the attendance in Accra, attendance dipped during this time. In Birmingham, there were no LA meetings ongoing during this time (i.e. when researchers were conducting research). Stakeholder expectations were for results they could immediately use for their work. Such challenges were addressed by making results of research available to stakeholders. In Birmingham for example, the results produced by the development of the City Water Tool provided an incentive for the water company to have a renewed interest in the LA process.

Beyond internal exchange of information among the learning alliance members, there was also external communication with others interested in water management in the city. The communication functions of the learning alliance included use of Google groups, use of switch Accra website; tracking visits to the website; also generally there were other visitors from outside Accra who wanted information. The perceived legitimacy of the LA also made the LA facilitator a point of information for different people that wanted to work in Accra. The Accra LA Facilitator received several researchers and students, both local and foreign, who were interested in knowing more about urban water management and saw the information provided by the facilitator on the website and through reports as being useful. The facilitator was recommended mostly by members of the learning alliance as well as external SWITCH researchers to these researchers who wanted more information from Accra. The water company for instance also recommended the Accra LA/Facilitator as a resource for information on water supply following the publication of the book on strategic planning.

The facilitator was thus required to work through these systems and make sense of the processes together with stakeholders to achieve the LA objectives.

8.3.1 Facilitating stakeholder interests in the learning alliance

One of the functions of the facilitator was promoting the interests of the stakeholders on platforms and managing conflicting interests. It required getting the sector to agree to use the platform as a major sharing point, but it also depended on the managers (facilitators

and coordinators) of the learning alliance not having their own interests or programmes. This underscores the need for independence in facilitating the learning alliance where the facilitators do not promote their own interest. At the same time, while being independent and not having entrenched interests, the facilitation is also required to steer the learning alliance in a manner that directs the process towards the goals of the learning alliance. In that case, the organisation that manages the LA becomes important; the organisation or individual that facilitates the learning alliance should be perceived as having a measure of independence while at the same time should be accepted by the participants of the LA as having the needed authority or legitimacy to facilitate the LA process. The facilitation of interaction among stakeholders included communication of research findings to the stakeholders and feedback to the researchers as well as facilitating the involvement of stakeholders in the research.

A key aspect of brokering linked to sustaining a multi-stakeholder process is about maintaining the motivation of the actors involved. From chapter 6, it is noted that the relevance of the topic of the learning alliance was one of the key drivers that encouraged members to attend LA meetings beyond the “sent by my boss”. While not explicitly mentioned, it can be noted from comments referring to information from LA meetings such as “*I use it for my work*” and “*I find it useful*” that stakeholders develop their own ways of benefitting and internalise their experience from the learning alliance.

Stakeholders were very interested in outputs and deliverables and there were instances where stakeholders indicated that they wanted “concrete” results. As noted earlier, a survey of stakeholders showed that most of them were visual learners, which might explain why they felt they needed to see what they were doing in order to feel they were part of a worthwhile activity during the learning alliance.

A common response of stakeholders to the question of motivation for attending meetings was about the topic of the meeting. This underscores a desire of stakeholders for a kind of issue-based stakeholder engagement. This response of stakeholders is reflected in the definition of learning alliance as bringing stakeholders together around a topic of mutual interest. The learning alliance can thus be described as an issue-based stakeholder engagement.

A study by Roloff (2007) showed that issue-focussed stakeholder management is the dominant type of engagement in many multi-stakeholder platforms because of the ability

to address complex issues and constraints in stakeholder collaboration. While Roloff (2007) points to research that indicates that there is not a particular approach to stakeholder engagement, it would seem from stakeholder responses that the design of the learning alliance around an issue of mutual interest is an appropriate way of bringing stakeholders together to solve complex issues. In this instance, the issue that the project deemed as being relevant was integrated urban water management.

Feedback to the stakeholders is important and the role of communication and documentation played an important role in this regard.

As noted from section 7.7, the decision to start a learning alliance as a self-organising group did not work too well. The concepts being promoted by the learning alliance had not been established well enough to generate interest from stakeholders to work towards it. Furthermore, being a new concept, stakeholders did not have enough information to provide support for developing IUWM. Stakeholders however, provided information relating to their work and this was synthesised in the learning alliance meetings. The synthesis of this information gave the stakeholders further interest in participating in the learning alliance activities because they began to clearly appreciate the results of the discussions when it became a “tangible” result such as a book, report or briefing note. Stakeholders noted benefits of getting to know different people and how they could then rely on the people they have come to know to get information for their work. A network of support for people’s work emerged from the learning alliance process.

Sustaining the process also required a certain level of time commitment from the members. The opportunity cost was discussed with the participants. Some responses to stakeholder interests and motivation in attending the LA meetings as opposed to other meetings were presented in Chapter 6 (section 6.6). It is clear that beyond individual needs, the issues were related to their organisations or work and people would participate in the learning alliance as long as it also gave information that was valuable for their work or could contribute to their progress at work or help them to do their job better. For example, Irene a researcher from an academic institution, noted that her promotion or her performance at work is measured by the contribution to papers/publications and the students that she teaches. External participation in activities does not contribute to the work or is not considered to be critical. Her participation, as she noted, was more out of interest and her own desire to build knowledge and to network.

Tracing how different researchers got to be part of the SWITCH consortium indicates that most of them became part of the consortium based on prior partnership and networks. This implies that existing social capital based on trust and pre-existing relations of mutual benefit is a significant factor that influences the formation and participation in LA. It also indicates that being part of the process did offer some networking benefits which could in the future open up opportunities for their organisation even though they could not perceive it immediately. Other researchers and participants recognised the contribution of the new networks to the improvement of their work. The formation of new networks and social capital is considered a contributory factor towards institutional change and innovation (Brown *et al*, 2005) and in this study, the learning alliance is seen to provide a space for the development of networks for collaboration.

To sustain the process, the facilitation was critical. Over time, the energy of the discussion and meetings went down and so by the third meeting, in addition to using the platform as a means of sharing research finds through an action research process. it was decided to turn the process into a strategic planning platform. This situation can be linked to discussions in section 7.3.1 (on strategic planning) and 8.2.5 about intentional facilitation where in order to keep and sustain the interest, an activity was identified for the participants to work around. This idea of engaging stakeholder around an activity fits into the initial project idea of action research and demonstration which involved all the stakeholders. `

The importance of the role of the facilitators is noted by the LA members. As noted, being able to have consistency of LA membership in Accra was a challenge and with time the facilitator had to explore different means to get consistent participation from the stakeholder organisations. In Birmingham, the facilitators had innovative means of ensuring participation through the use of professional bodies such as Chartered Institution of Water and Environmental Management (CIWEM) to convene some of the meetings. The use of the city model tool also provided a means of engagement for the members of the learning alliance.

“Bringing people in... keep finding those people...we may need some constant members...it is best to have individuals in terms of retaining contact. However, it also needs to be borne in mind that usually there are many “alliances” within Birmingham, there needs to be a clear strategic focus..... If you see who your allies are you can put them together” (Stakeholder, EA).”

A critical aspect of brokering the learning alliance process was communication. There were different levels of communication:

- Communications within the city (with learning alliance members and other players in the city) and
- communications outside the city (with a global audience)

The key objective of communication at the city level was to communicate results of research and obtain regular feedback from stakeholders to researcher and vice versa. To promote stakeholder interest in the learning alliance, various forms of communicating with stakeholders were employed within the cities; face to face visits, participating and interacting in other sector meetings, communicating by email and Google group (did not work so well in Accra). Email did not work so well in the beginning in Accra but towards the end when stakeholders were engaged, the email system worked. Also, this improvement in communication by email could also be linked to the increase in access to the internet over the project period. There were city websites and visits to the city websites were monitored (for Accra).

Presentations at sector meetings; for example, in Accra, SWITCH Project was presented at different fora including the Mole³⁵ conferences (special session on Learning organised and facilitated by SWITCH/IRC), Ghana Water Forum, Tri-Partite Project learning alliance meeting. In Birmingham, the facilitator of the Birmingham LA made presentations at Chartered Institution of Water and Environmental Management (CIWEM) meetings. They also organised a special section on SWITCH at an international conference on Hydrology³⁶

There was also global level dissemination of information through the SWITCH website. The facilitators also made presentations at international conferences and wrote papers for publications. The 'SWITCH in the city' book was produced towards the end of the project and a SWITCH Training Kit compiled by ICLEI, and the publication of research results in Journals etc. Information was also redirected to the cities and contacts were made through the city websites by organisations that were interested in SWITCH or in the information provided on the websites.

³⁵ Mole is the name of a town in Northern Ghana where a series of conferences on water and sanitation were started.

³⁶ European Congress of the International Association of Hydro-Environmental Engineering and Research in 2010

8.3.2 Formalisation or Institutionalisation of the Learning Platform

The process of formalisation of the platform came up in various discussions where it was necessary to have (i) consistency of attendance of LA members, (ii) a point of uptake for LA activities and (iii) contributions from member organisations towards the research and LA activities.

Institutionalisation of participation in the learning alliance process; requires an understanding of the goals and what each stakeholder is expected to contribute. As it was, there was commitment to participation in meetings though this had not been formalised. Once invitation letters to LA meetings were sent on time and there was no sector event which was clashing, an LA meeting would be well attended by members who had been invited. At the national level to avoid a lot of meetings which were scheduled at the same time, a sector meeting calendar was developed and shared through a national learning alliance platform which came up towards the end of the SWITCH LA process. Meetings were publicised through the platform (email group) to ensure that different meetings did not clash.

By the fourth Learning Alliance meeting in Accra, it was agreed among stakeholders that a commitment would be made to formalise the meetings. A template was given to the stakeholders which they completed and sent to the LA facilitator. This formalisation, however did not drastically change the process. This means that while formalising the LA meetings or platform may provide some legitimacy, it does not necessarily increase attendance and participation in meetings. Interest in the attendance of meetings was however improved through the participation of institutional heads.

It was noted that with increased participation from some of the heads of sections in the stakeholder institutions, the LA was able to get the members to be more committed. The LA was also able to get support (in kind) for the organisation of meetings. This support included the use of meeting rooms of the stakeholder institutions in some instances. This outcome would suggest that informal endorsement of the LA process by heads of institutions gave some legitimacy to the process. The participation of institutional heads was sometimes secured informally through discussions before formal letters were written; implying that sometimes the heads of institutions were receptive to informal meetings and discussions. Thus, in sustaining a learning alliance, a balance needs to be developed between the formal setting and informal meetings and engagement.

Another way of exploring the legitimacy of the LA is based on the perceived role that some of the stakeholders thought the LAs could play. Some stakeholders made reference to the LA making policies. When stakeholders talk of policy that the LA can come up with, the stakeholders appear to say that the LA has some “power” to influence. By the end of the engagement process, stakeholders saw the LA as a “policy making” group. These are the steps that led to stakeholders calling for a policy forum to share LA findings. Stakeholders appeared to be confident in findings that the LA members had come up with and they were confident that there was the possibility of exerting some influence on policy (refer to section on stakeholder learning experiences and early outcomes of learning alliances described in Chapters 6 and 7).

Another way of looking at the legitimacy of the learning alliance process or people’s perception of it, is to look at how many stakeholders were retained over the period of 5 years. 51% of the original stakeholders who were consulted during the scoping exercise (in 2006) were still part of the group at the end of the project in 2011. Also, the numbers of stakeholders who attended meetings over the years were maintained. In the first year there were high numbers; in the 2nd year the numbers went down, but towards the end of the learning alliance period the numbers increased again. Learning alliance meetings were not limited, they were opened to all members of the sector and invitations were sent out; initially information was sent out by letter and also by email. The challenge of sending information by email (formal invitation versus perceived informal invitation) is that the stakeholders stated that it was not sent to their organisations and that they needed permission from their bosses to attend meetings. On the flip side, when the information was sent to the institutions, sometimes the institutional head sent different people and this affected continuity. One solution was to include ‘for attention of’, followed by the name of the person who often attended LA meetings. Alternatively, to send both emails (informal to some stakeholders) and formal letters so that members were aware of meetings either way.

8.4 Conclusions

In concluding this chapter, four key issues are outlined; the need to consider the time frame for a learning alliance vis a vis a project based timeline, the need for adequate resources to fund the start-up and operations of a learning alliance; the need for brokering of power relations and fourthly the need to work within the “informal spaces” with the sector. Subsumed under the second issue is the critical role that the SWITCH project played as a

catalyst for the learning alliance process in the various cities where learning alliances were set up. This suggests the need for an “initiator” of a learning alliance process. This initiator should have resources available to start and maintain such a process.

Information presented in this chapter suggests that resources were required to fund meetings and the cost of facilitation until the point where stakeholders expressed interest to take up some of the cost. In implementing a learning alliance, an initial assumption cannot be made of the interest of members of the learning alliance to automatically obtain funding from within their organisations to pay for the cost of operating the learning alliance. In the case where organisations may be interested, the internal funding challenges of the organisations may affect the ability of the organisations to actually provide funds.

Secondly, to get the learning alliance process moving it was critical to facilitate the different interests of stakeholders towards a bigger overarching goal. The process of visioning (in Accra and other cities) provided a means of defining an overarching goal for urban water management and supported the development of a common interest. Facilitation ensured that an open platform was created and the interests of the different stakeholders, particularly groups that are considered marginalised, were considered.

Finally, there was an interest from LA members in maintaining some level of informality within the city learning alliances (Accra, Birmingham and other cities). While institutionalising (formalising) the learning alliance appeared to be a good project “deliverable” on paper, in practice, meetings and decisions were brokered informally. Information was also shared informally through the platform and the stakeholders saw the LA as an informal source of trusted information. This increased the interest of stakeholders (particularly users of information) in both Accra and Birmingham when they realised that they could easily obtain useful information from the LA without having to go through tedious formal channels. The endorsement of the city learning alliance by the heads of organisations increased the interest of stakeholders.

The above mentioned all point to the need also for critical facilitation which plays a pivotal role in the learning alliance process. There is the need to have the right set of skills and attributes in a facilitator(s) and this requires adequate resources to have and maintain facilitators consistently over a period of time that is required to achieve the needed results of the learning alliance.

The next chapter which is the concluding chapter to the whole study, will draw conclusions on all the key findings from the study. The chapter also identifies the study's contribution to knowledge and recommendations for policy, practice and further research.

9 Conclusions and Recommendations

9.1 Introduction

This study has researched the use of SWITCH city learning alliances, as a potential innovation in governance approaches for integrated urban water management. The main research question was as follows: **How and to what extent can learning alliances stimulate, influence and promote individual and institutional change for innovation; as applied in integrated urban water management (IUWM)?**

The study had the following sub questions:

1. How can the learning and innovation processes of city learning alliances centred on Integrated Urban Water Management and Governance be described and analysed?
2. How does learning occur and to what extent does it go beyond the LA platform within a city to influence change and innovation in IUWM?
3. How do the social and institutional dynamics of urban water governance relate to innovation in urban water management?

The study has investigated and presented the conceptual basis for investigating learning alliances (Chapter 2). It has described and assessed the initiation, implementation and outcomes of a learning alliance process aimed at Integrated Urban Water Management. The study used a descriptive case study approach to follow the paths of learning alliances in two cities (Accra, Ghana and Birmingham, UK). The study employed the use of mainly qualitative data which was provided by observations, interviews with the key actors of the process: city level stakeholders, project researchers and facilitators as well as a review of project documents. In addition, the researcher also relied on her observations as an active participant in the subject of the study. The chapters of the study followed a timeline (2007-2011) from the design and conceptualisation of the learning alliance approach at the start of the project, to the formation and operation of learning alliances.

This chapter presents conclusions and recommendations as well as contributions to knowledge based on the key findings of the study. The study made use of a conceptual framework (figure 2.1) which incorporates different dimensions of learning alliances.

In defining the theoretical framework for this study in chapter 2 (section 2.2, figure 2.1, section 2.3.8, figure 2.13), four possible areas of influence were identified for the learning alliance. Contributions to knowledge were expected in the following areas:

- Contribution to Knowledge relating to governance arrangements
- Contribution on knowledge relating to learning
- Contribution to knowledge relating to innovation systems
- Contribution to knowledge on collaboration

The subsections in the chapter are presented according to the specific research questions. Contribution to knowledge, Implications for research and recommendations for further study are presented at the end of the chapter.

9.2 Conclusion on Sub-question 1: Analysis and description of Learning Alliance

9.2.1 What is a city learning alliance in practice?

The definition and description of a learning alliance is provided in Chapter 2 of this study; a learning alliance brings together stakeholders around a topic of mutual interest and in this case, the common topic of interest for stakeholders in the SWITCH learning alliances was Integrated Urban Water Management (IUWM). The defining characteristics of a learning alliance are the actors and actions of actors, the atmosphere or context within which a learning alliance is situated. The outcomes achieved by the learning is dependent on the actions and atmosphere of the learning alliance (Chapter 2, table 2.1 and section 2.3.8.1, sub-frame 1). The Learning alliance process in this study was initiated through a project to serve as a tool for engaging stakeholders in an action research process for the project. In considering the learning alliance in practice, the sub-frame presented in section 2.3.8.1, was used to consider the various dimensions of embedding, context, diversity, agency, temporality and multiple outcomes.

In terms of context and diversity, within the SWITCH learning alliances, the actors were mainly expected to be **city level** actors involved in urban water management (see stakeholder classification in section 2.3.4.1). It is noted however, that in Accra, which is a capital city, there were **national level** stakeholders participating in the activities of the learning alliance. This suggests that for a learning alliance, the scope of actors may not be limited to one level. This is recognised in the conceptualisation of the learning alliance

which indicates that stakeholders can come from different levels (see definition of learning alliance in section 2.3.2). The learning alliance members were identified through stakeholder scoping and mapping exercises (chapter 5, sections 5.2.5 and 5.3.2). A detailed institutional mapping exercise provided more information on how to engage the stakeholders. The inclusion of multiple stakeholders ensured that the different interests and complexities in urban water management were adequately represented and subsequently dealt with through the learning alliance. The identified stakeholders were consulted to assess their interest in the learning alliance process and later were invited to be part of the learning alliance process (section 5.2.6). There were stakeholders at different levels (National and city, operational and policy levels). Having stakeholders at different levels fits within the idea of having the LA breaking vertical barriers and speeding up information flow and uptake of innovation.

In inviting stakeholders to be part of the learning alliance process, it is noted that the conveners should be influential and have the power of convening. This category of stakeholders who have the power to influence can be referred to as champions and have some power over the success of the project (Grimble and Ward, 1997). In this study, we note that the researchers fitted well into this category since they had both importance (their interests were a priority at the start of the project) and influence in the project. It was noted that with participation in the learning alliance however, their interests became more aligned with stakeholder interests as the learning alliance progressed. The key point is that the use of champions encourages interest in the learning alliance process from the start; given their power of convening.

In terms of embedding the process within an existing system, the learning alliance remained an informal process within the larger institutional framework within the cities in which they operated. There were no formal sets of rules and constitution or guidelines (beyond project guidelines on how to set up learning alliances) on how the learning alliance operated. There was also no hierarchical structure in the learning alliance and stakeholders convened at the same level (rather than having multiple levels and multiple neighbourhoods of learning alliances that interacted, the SWITCH learning alliances were just one learning alliance bringing stakeholders from different levels and sectors together). The learning alliances evolved and developed in their own way depending on the setting. Activities of learning alliances are defined by the project or context within which they were formed. These activities include project meetings, joint research and demonstration

activities. These activities underpin the stakeholder engagement process and the elements of the stakeholder engagement process (as defined in the conceptual framework, section 2.3.8) were identified as stakeholder interaction and collaboration which leads to social learning, resulting in innovations and improved governance.

Interaction among stakeholders on the learning alliance was a strong feature of the process. Information was shared through mainly through interactions at meetings and with time through emails and website. Meetings also provided a contact space for stakeholders to discuss and deliberate on issues of interest on urban water management. The meetings provided an opportunity for stakeholders to know what others are doing and also get to share what they are doing with others. This awareness creation space provided through interactions and meetings was useful for researchers to share information on their research and receive feedback from the LA members. Through these interactions, stakeholders are also able to bring out their interests. There was also an increased awareness of the different stakeholders and their inter-linkages and inter-dependencies in the water sector (for example in by the 4th LA meeting, some stakeholders recommended the expansion of the LA to. See Appendix 3). While the interactions may be good, the participation of learning alliance members in meetings tend to fluctuate and may decrease with time. But with learning alliance members seeing added value of process in the work or seeing concrete actions or having objectives (or outcomes of the activities clear), members tend to keep participating the meetings. This desire to have something concrete to work about highlights the type of learning styles of stakeholders (section 6.6.3) where we see most stakeholders as active as well as visual learners. This suggests that there should be an instrument for learning or learning is more enhanced by doing an action in addition to the underlying principles outlined in chapter 2 where learning through social engagement is seen as the primary source of learning for learning alliances (see further conclusions on learning outcomes in section 9.3 and 9.4).

In terms of temporality, the life cycle of the learning alliance within the 5 years of the project follows in similar fashion, the life cycle framework for a knowledge network developed by Creech and Ramji (2004); with the first few years serving as the formative stage of the learning alliance. Similarly, the growth phase for the LAs began at the beginning of the 4th year of the project. However, the project came to an end in the 5th year of the LA process and so the experiences beyond the 5th year could not be documented. These could have represented a renewal or declining phase, but the limitations of the

project did not provide the opportunity to study a learning alliance beyond the formative stage. It should however be noted that within the formative stages of the learning alliances there are instances where attendance or interest in meetings could decline due to stagnation or perceptions about the learning alliance not getting concrete results. At the beginning of the learning alliance, knowledge sharing appears to be quite active among the LA members, but as the learning alliance progresses, to sustain the LA especially when there is no new information to share, it becomes necessary to have an activity or clear objective around which the learning alliance engages. In Accra, the LA members engaged around the preparation of a strategic directions document on IUWM and demonstrations in urban agriculture. In Birmingham, the LA members engaged around the City Water Tool and other demos and planning activities. Other cities within the SWITCH project also had various demonstrations around which cities stakeholders were engaged. This suggests that learning alliances should be active or have key activities or goals that stakeholders are engaged around. This is because with time, interactions that do not appear to be working towards a common goal reduce the interest of stakeholders in the learning alliance. Stakeholders want to be working towards something “concrete” or a clear vision they can work towards. Demonstrations and the research conducted by the LA members provided an avenue to jointly identify and address a challenge together. Letters of intent to be part of the research which also indicated what LA members would contribute were also provided by some institutions as part of the Urban Agriculture action research.

Another strong point of the learning alliance is the acceptance of results and recommendations and strategic directions from the learning alliance members because they were an integral part of the process. This is one of multiple outcomes of the learning alliances discussed in this chapter.

A further feature of the learning alliance is that it was a managed or facilitated network. Learning alliances were managed by city coordinators and facilitators. This was necessary to keep the learning alliance process running. There was the need for coordination and facilitation to regularly bring stakeholders together in meetings and to ensure that information flow occurs. Having facilitators and coordinators also served to build the relationships across the different stakeholder groups (further discussed in section 9.4). In terms of agency, the learning alliance has multiple agents (stakeholders) playing different roles. The key agents in the LA are the coordinators and facilitators (some of whom were champions) who played a key role in managing the direction of the learning alliance

process while taking into account the interests of stakeholders. This is further discussed in the next section.

9.2.2 What are the input and conditions required to sustain a multi-stakeholder engagement process?

The inputs and conditions required have been discussed extensively in Chapters 6 and 8 (section 8.2.3). This section highlights the key conclusions arrived at in earlier discussions. Various barriers and enablers towards IUWM and how the learning alliance could contribute towards making a change in institutions in support of IUWM were identified. One of the features of IUWM discussed in chapter 2 is the involvement of all stakeholders. While it was noted for example, that existing policies on IUWM make room for stakeholder engagement, the specific mechanism for continuous interaction and concerted action was lacking in the institutional landscapes explored. This represents a gap between policy formulation and policy implementation. By embedding itself as a feature in the various cities, the learning alliances provided a space for continued engagement of stakeholders in a free learning environment characterised by trust. It was noted that trust and openness on the platform were two of the conditions that encourage stakeholder participation, thereby sustaining the learning alliance. There are factors at two levels that can sustain or stop a stakeholder process. One relates to **operational factors** (inputs); how to structure and keep the learning alliance running (in terms of resources and facilitation – which is discussed as a factor contributing to learning in section 9.3). The other is related to the motivation or interest of stakeholders (**intangible factors**) in being part of the learning alliance. The activities of the learning alliance and how engaging these activities are, are also one of the determinants of sustainability.

With regard to operations and resources, constraints identified based on interviews with stakeholders (and discussed in chapter 8) were as follows:

- **Resources** (To sustain a learning alliance after initial project funding there is the need for stakeholders to commit to funding and support the operations. While stakeholders may be interested in doing so, the inadequacy of their own resources becomes a barrier. Sometimes there is generally a limitation of resources in the water sector because other sectors may be given higher priority; in other instances, organisations may be lacking enough resources to adequately perform their core function and thus are unable to commit more resources to the learning alliance)

- **Time, linked to human resources and availability of members to participate** (Learning alliance at the beginning was not seen as a mainstream activity. For this reason, the issue arises of which events are more interesting for stakeholders, which ones contribute directly to organisational mandates or do stakeholders have enough time for their jobs in order to have what they may term as “extra” time for meetings. This can lead to a reduction in participation of LA members but as the stakeholders become more engaged and see the value of the learning alliance there is an increase in attendance as stakeholders now make time to attend learning alliance meetings)
- **Financial resources** – linked to supporting the running costs of the LA and paying for projects. (In general, in the water and sanitation sector in Accra, there is extensive reliance on external funding from donors to support activities in the sector and thus initiatives such as learning alliances. This can affect the situation whether the learning alliance will run after a project or not. Particularly for a facilitated learning alliance process, funds are needed to sustain a facilitator and to cater for the logistics of convening meetings or activities.)
- **Cooperation and collaboration among institutions** (this determines whether stakeholders are willing to continue to work together even when the project learning alliance ends. Increased willingness for cooperation and collaboration which is the result of engagement of the learning alliance sometimes leads to commitment to continue. Even when there are resource constraints, sometimes coordination improves the distribution and use of resources to support the process. Different stakeholder may contribute different resources to the learning alliance. For example, in Accra, some stakeholders contributed resources in kind such as research laboratories for the urban agriculture research and demonstration)

The operational constraints noted above can, more often than not, be dealt with by adequate project planning and design and budget availability. However, it is in relation to the internal constraints which are more dependent on stakeholders that this study can make an interesting contribution.

Stakeholder motivation is a fundamental factor that will either lead to learning or not; in addition, it determines whether a stakeholder will continue to take part in an activity. Bandura (1971) highlights motivation or positive reinforcers as one of the factors that contribute to an individual’s interest or ability to learn. Extending this to the LA process, we can note that the intangible constraints will have a significant role to play in sustaining

the process or otherwise. While a study by Sol *et al* (2013) referred to in chapter 2, concentrated mainly on the internal intangible factors such as level of interactions, beyond the level of interactions, this study also looks into external factors such as power, hierarchy, time etc. These external factors refer to the environment within which a stakeholder finds themselves. This is underscored by Bandura's work on social learning which makes a link between the individual and environment, or situation in which they find themselves. The environment may either positively reinforce and motivate stakeholders to be part of the LA or may discourage them from participating. This suggests that environmental determinants and factors strongly influence individual behaviour. Comparing this to the individuals within the LA, we can note that the interest and motivation in being part of the LA is therefore shaped by their environment; which is in this case their respective stakeholder organisations. Building on the Theory of reasoned action and planned behaviour, it is noted that while individuals may be influenced by information to respond positively to the learning alliance, their intent to participate consistently may be constrained.

Drawing from this we note that another constraint to an individual's participation is organisational interest (this also applies the other way round). Regarding the question on how to sustain the learning alliance, it was noted from stakeholder interviews that key to maintaining the interests of stakeholders in the learning alliances was keeping their interest and motivation. This is consistent with literature where stakeholder participation or interest in learning alliance or a multi-stakeholder platform cannot be assumed. Warner (2005) points out that creating a space for open participation within a stakeholder platform does not necessarily mean that there will be enthusiastic involvement of stakeholders. Often the interest or involvement in a multi-stakeholder process is dependent on the relevance of the platform to the stakeholder and often by extension, the stakeholder organisation. We saw this in the interactions and interviews with the various stakeholders who were part of the LA. While some were quite enthusiastic, others were a little more sceptical and a few remained neutral participants. In all instances, however, it was noted from the interviews (Chapter 6) that there was an underlying motivation for stakeholders to be part of the learning alliance that was linked to their work and the relevance of the information they got from the learning alliance. To sustain individuals' interest in the LA, there is likely to be a need for changes within the respective stakeholder organisations that support LA processes. Having an organisational interest in LAs could also be influenced by individuals in their organisations reporting back on the value of the LA. This becomes an iterative process where individuals participating in the LA could influence their organisations to

support increased participation in the LA. This experience means that while organisational interests are important, the individual's interest remains critical in ensuring sustainability of the LA.

This is one of the functions of the facilitator which requires key skills that balance the interests of the learning alliance members as well as the project interests, while at the same time facilitating the sharing of information to give the stakeholders a sense of purpose (and a sense that something concrete is being done). Maintaining a good facilitation process requires adequate resources (personnel time and budget) for the facilitation team. The facilitation of a learning alliance process requires committed people who can dedicate enough time to engage, regularly follow up and possibly earn the confidence of key stakeholders as the process moves on. In this regard, the skills of the facilitators need to be developed. To achieve an effective facilitation process, different roles could be assigned to different people. For example, in the SWITCH process, there were the coordinators who had a significant level of influence in the cities working with the facilitators. Facilitators in the SWITCH cities relied on their experience and understanding of the local context to engage stakeholders. There were however challenges in areas where there wasn't enough budget to engage the facilitators on a full-time basis.

Building ownership of the LA into the city is one thing that was tried; ultimately it was expected that city authorities could take up the ownership of the learning alliance and host it. Perhaps the time frame within which this was to be achieved was too short and also coupled with the lack of resources, human and financial, it was a difficult task to expect the cities to be able to take up. This brings up questions of who sustains a learning alliance. In the situation where an alliance is spontaneously³⁷ formed (initiated by city stakeholders), the groups that form the alliance are expected to maintain it and elect their own leaders and hosts, but in the instance where the learning alliance is externally initiated, it remains a product of the project, often dying with the project. However, spin offs and other projects provide an opportunity to continue some of the ideas promoted by the learning alliance. Accra is an example of the latter, where the idea of a coordination platform was 'sold' to stakeholders and this idea was picked up on other projects within the water sector.

³⁷ Warner (2005) indicates that multi-stakeholder platforms do not usually come about spontaneously but through an external facilitator or convening organization or a charismatic leader which bring together people.

One issue of sustainability that needs to be considered is whether learning alliances can transcend beyond a project period (especially when the end of the project signifies the end of funding and dedicated human resources for managing the activities of a learning alliance). When the objectives of the learning alliance are closely linked to the project, the end of the project usually signifies the end of the process. The experience on the SWITCH learning alliance process is consistent with experiences where learning alliances end with the end of a project. With the SWITCH project, the idea was to continue the learning alliances beyond the project, however the issue of the objectives and funding for learning alliances beyond the project could not be adequately addressed. While the formal process of meetings and learning alliance activities could not continue beyond the project, it is worth noting that the knowledge products and documentation of research that were created as part of the process is still available for use by stakeholders in the sector. This indicates that the part of the learning alliance that could transcend the project timing is the knowledge that is generated as part of the process. This resonates with the point made in table 2.1 (section 2.3.2) which indicates that the LAs will often emerge as virtual networks. The knowledge generated therefore becomes an important aspect of sustaining the learning alliance.

This knowledge generated can lead to learning and to innovations. Thus, the innovations and changes that result from learning alliance may be the critical outcome that should be considered when setting up a learning alliance project. The project period however may not be enough to actually determine the sustainability or decline of the learning alliance (see section 2.8, table 2.5). The learning alliance process for SWITCH was within a period of 5-6 years. A framework for lifecycle analysis of learning alliances indicate that this is the stage for growth or for the status-quo to remain. Given the timeline for the project learning alliance and the study, the sustainability stage was beyond the scope of study. However as discussed above, there were indications that activities would not continue, however the information and knowledge generated will continue beyond the formative stages of the learning alliance (transformation of a physical meeting to virtual network of information sharing and engagement that goes beyond the formal meetings of LA).

9.3 Conclusion on Sub-question 2: How does learning occur and to what extent does it go beyond the LA platform within a city to influence change and innovation in IUWM

The pioneering use of SWITCH learning alliances for integrated urban water management sets the stage for an original contribution to the knowledge on the use of a learning alliance in the water and sanitation sector. The first and main contribution of this study is the in area of providing further and more detailed information on the use of learning alliances as an innovative mechanism in urban water management. While learning alliances had been applied in other fields of work such as agricultural sector, the understanding of the use of learning alliances in water and sanitation has been limited. This study also contributes to discussions and policies relating to the use of social learning as a means for achieving more sustainable urban water management. As stakeholder engagement is increasingly becoming an integral part of urban water management policy and practice, there is a need for an enabling environment to support such platforms as the learning alliance. The assessment of outcomes as well as constraints provide policy directions for the initiation and implementation of learning mechanisms in water management while at the same time providing strategies for practice.

9.3.1 What are the factors that support or prevent learning within a city LA?

This section will explore the factors that support or prevent learning and also discuss the processes through which learning occur. In the conceptual framework presented in Chapter 2 (section 2.3.8, see figure 2.13), learning was expected to occur through stakeholder interactions. The space and quality of stakeholder interactions is therefore a critical aspect of the learning alliance. A three-stage process of learning is proposed by Nevis, DiBella and Gould (1995) and which is used in subframe 3 (section 2.3.8.3); this refers to knowledge generation, knowledge sharing and use of knowledge. In the LA process, some tools and methodologies and facilitation were used to promote learning. In addition, it was noted that stakeholder motivation and learning styles also had an influence on the learning within the LA.

Hawkins *et al* (2009) recognise that learning occurs at the individual, organisational and institutional levels. Within the LA process itself, different levels of learning were observed; at the individual level and the resulting collective level within the learning alliance as a whole. Transformations of change from the individual level to an organisational or institutional level is often constrained by a number of factors. This could include the level

of power that the individual has or the level of resources available to support change. The enabling environment that facilitates change could also determine how far an individual that is motivated internally could transfer the change beyond self. This is underscored by earlier discussions in chapter two on the theory of reasoned action and planned behaviour; which shows that the actual behaviour implemented by a person is based on an ability to overcome constraints to change. While the institutional level of the learning alliance was not too prominent, there were indications that there were some levels of learning that made an impact on policies. These outcomes are further discussed in section 9.4.

While it appears that the conceptualisation of learning suggests step-wise process, the experience of the learning alliance is far from a linear process. It is a complex process underpinned by interactions through: participatory meetings and workshops, training programmes, visits to communities/engagement with community members and participatory research with farmers. Even how the individuals learnt on the learning alliance did not represent a straightforward linear process. It was a mix of different experiences that led to outcomes regarding changes in perspectives and understanding (see Chapter 6). It was also noted that there is distinction between transformative learning and cognitive type of learning at the individual level (that results from knowledge gained) and experiential learning that occurs through participation and observation of others. A fundamental factor that brought about learning was stakeholder motivation and the perceived benefits of the information or knowledge generated.

In addition, the regular and continued interactions among stakeholder even beyond meetings led to an enhanced learning process. These were noted through the changes that occurred within the learning alliance (where learning is based on interactions – changes in the types of interactions observed). At this level, the significance of meetings and continuous stakeholder interactions as a means of promoting learning is important.

Even though the criteria for assessing learning looked at internal processes from knowledge generation to knowledge sharing to the use of knowledge, the role of facilitation in promoting the learning process through stakeholder engagement should be recognised. While the role of facilitation was critical in the engagement of stakeholders, learning itself cannot be facilitated within the individuals. Facilitation therefore focused on engagement and not on learning at the individual level. The learning that occurred emerged based on the different experiences of individuals and underpinned by their motivations. Facilitation

of the platform played a key role in understanding individual motivations and shaping discussions to accommodate the different interests.

This study on the use of learning alliances has also provided insight into the workings of learning alliances and how learning occurs. As indicated earlier, engagement and interaction among stakeholders is a key feature of learning alliances. These interactions are expected to lead to increased awareness and knowledge which in turn leads to learning. The value of openness in the learning alliance process is one of the lessons learnt from the study. In the SWITCH cities, the learning alliances become a space where various stakeholders met to exchange ideas. With time, the various stakeholders came to value the importance of learning meetings and make reference to the information obtained and networks developed. This process was underpinned by developing trust and respect among members. Participants in the process had to learn to respect the view of others and a culture of respect developed among LA members. In addition, there was trust in the LA process. This allowed the LA to obtain information from members. Members felt confident and open to share information as well as communicate their views during meetings. This development of openness and respect did not start at the beginning, but was the result of a gradually facilitated process which required regular meetings and networking in between meetings. The openness and transparency of the LA process removed some of the barriers towards information sharing and use which is a critical part of learning and innovation. The earlier reference to the theory of reason action and planned behaviour noted that constraints affect the ability of stakeholders to change their behaviour; and the openness that led to increased sharing of information is an example of removing a barrier that encourages changed behaviours. Towards the end, when members had developed some level of respect for each other's views it was easier to move forward with a common agenda towards integrated urban water management. This was evident in the case of Accra where stakeholders began to call for an expanded LA platform integrated agenda when they came to accept and respect the different roles being played by stakeholders (section 6.3.1).

The role provided by researchers in the LA was related to the provision of information. The learning alliance provided a space where SWITCH researchers could apply the results of their research and share with other external stakeholders. To some extent, there were successes in translating this research through researcher interactions on the stakeholder platforms. The impact of researchers in learning alliances was higher than it would have been if individual researchers were located within their institutions conducting research

without appropriate avenues to share with stakeholders. The researchers played a key role in the demonstration activities, providing technical guidance and options for decision making regarding the research. The research was however action-oriented with a view to achieving greater integration and wider impact through the city level learning alliances. The research was required to actively involve the city level stakeholders. Decisions on the research directions were therefore taken in collaboration with the users through the action research process. Through this, the researchers had the opportunity of using the learning alliance platform to share the results of their work with the stakeholders in the water sector and also to interact with the bigger project learning alliance across different countries. Interviews with the researchers indicated the exposure being part of the learning alliance platform both locally (in their home country) and externally gave them (See section 6.5). This was possible where researchers were able to leave their more academic perspectives and embrace practitioner roles to some extent. Researchers had to learn to play facilitation roles in some instances. The extent to which they were able to play this facilitation role depended both on the individuals and also the extent to which their research institutions allowed them to go outside the academic setting. This suggests the need for the right partners in terms of individuals and organisations to be selected as part of a learning alliance approach through an appropriate scoping process. It could also be noted that based on experiences leading to change in stakeholder perceptions (Chapter 6) that the involvement of stakeholders in the LA process has the ability to bring a change in perspective in otherwise purely academic researchers, to be more supportive of an action research process.

The learning styles of stakeholders also had an impact on how learning occurred. The use of demonstrations provided an opportunity for learning-by-doing for stakeholders. This falls into the example of active experimentation put forward by Kolb (1984) as part of the learning cycle. As noted, the learning cycle has four nodes, namely: abstract conceptualisation, active experimentation, concrete experience and reflective observation. While the process of learning can begin from any of the four nodes and remains a continuous activity, there are suggestions that this process often starts with active experimentation. Because actions are influenced by concepts, my comment is that it begins at a point between the two. Abstract conceptualisation was a key starting point in the learning alliance process as ideas from previous experiences with learning models and stakeholder participation models led to the development of the learning alliance. The experiment of the learning alliance process enabled experience to be gained and through

reflection on the process and experience, conclusions were drawn and further conceptualisations developed from the learning experience. Stakeholders were thrown directly into an action research process where was active experimentation about both the learning alliance and integrated urban water management. They had an opportunity to plan experiments together and based on their experience made observations and reflections both about the learning alliance process and the extent to which it contributed to learning as well as ideas on Integrated Urban Water Management.

The points described above reflect some of the features identified by Muro and Jeffery (2008) as influencing the process of learning. They identified repeated meetings in an egalitarian atmosphere, open communication, diversity and opportunities for influence as contributory features for social learning processes. We see the learning alliance process as described following a similar process. Similarly, facilitation is also seen as a critical factor in the LA process described above.

9.3.2 What are the processes through which multi-stakeholder platforms/learning alliances can contribute to innovation in IUWM?

The learning alliance meetings in Accra and Birmingham provided a space for validation of research findings and the ‘informal’ uptake of research findings into policy without having to go through a long process of submitting reports which might never be read. The learning alliance also became an avenue for informally influencing policy directions. This was evident across all the learning alliance cities. This was the result of a long process of engagement and continuous participation in the platform by sector stakeholders. In addition, there was the need for endorsement of the process (both formally and informally). This was done by inviting key persons and high-level official to some of the LA meetings. This allowed the LA to achieve some level of legitimacy and influence among stakeholders. The influence occurred through the recognition and endorsement of the learning alliance by heads of institutions and departments within the sector. Recognising the learning alliance and attending meetings or designating staff from their organisations to attend the LA meetings, encouraged increased confidence and interest of their staff in attending meetings. The influence of having heads as part of the learning alliance is discussed further in section 9.4 but their participation is a motivating factor or endorsement that reinforces the importance of the learning alliance to their staff who are members of the learning alliance. As noted by Bandura (1971) these positive reinforcers encourage learning.

As the learning alliance became legitimized, the use of email and electronic communication for convening meetings as opposed to official signed invitation letters became an option in the SWITCH LA Process. This was effective for communication and improved interaction among LA members where one does not always have to go through formal channels. To some extent, this is effective for social learning where information can easily be shared among members without formal barriers. Similarly, the website of the LA served as a useful resource for information sharing. Once the learning alliance members were confident of the information being provided, they started to make use of that information for their individual work. The platform therefore provided an avenue to shorten the pathway for innovation and also supported the uptake and use of information. There was an increased capacity for innovation because the learning alliance members could openly share their ideas for feedback from other sector practitioners.

Getting the learning alliance innovation and recommendations into the water and sanitation sector required support and agreement from other key stakeholders and SWITCH partners, particularly with implementing some of the recommendations as part of their organisational goals and mandates. However, the idea of a learning alliance beyond SWITCH was not feasible in the absence of a budget to keep the process running including the hiring of a full-time facilitator. While stakeholders were interested in a process going beyond the platform, the lack of resources to fund the convening of the meetings meant that formal regular meetings came to a natural end. It is however noted that the networks formed as a result of the meetings continued beyond the learning alliance. The knowledge that was produced also went beyond the process. This means that processes of innovation initiated by the learning alliance have the potential to go beyond the process; in terms of knowledge adaptation and use.

These tools, methodologies and processes described above emphasize the aspects of innovation (Hall, 2010) described in the conceptual framework sub frame 4 (box 2.4) – these are interaction, knowledge generation and learning as well as adaptation of knowledge for use. Furthermore, we see three of the six innovation narratives presented by Hall et al (2010a) at play in the learning alliance process (see box 2.4 for list of innovation approaches). The processes strongly emphasize the capacity-led type of innovations. To a large extent, we see the learning alliance as enhancing the capacity for innovation by creation of spaces for interaction and collaboration among stakeholders. This created a space for learning and the generation of knowledge that is useful for sector

stakeholders. Another aspect of innovation capacity that was enhanced was the creation of networks for information flow and improved communication. Furthermore, we note the research communication-led approach which happened through the action research and the opportunity for users of the research to contribute to the co-creation of knowledge for use through the demonstrations and validation meetings. This led to wider acceptance of research results because the users were part of the process. This last part falls within the user-led approach to innovation. For example, the participation of farmers in the learning alliance meant they could contribute to research regarding the use of waste water for agriculture which was a predominant practice. They had the opportunity to learn about recovering nutrients for use on their farms to improve on their farming methods and possible reduce costs of farming inputs (fertiliser). This was critical to their livelihoods. For general stakeholders, the participation in the research led to the creation of awareness about the use of waste water in urban agriculture and a wider acceptance of produce from farmers (refer to section on results of demonstration, section 7.5). The wider acceptance of results from the learning alliance led to changes in perspectives about integrated urban water management which moved beyond the learning alliance into general sector practice through the adoption of some of the recommendations of learning alliances.

The study identified a number of tools and methodologies that were applied to the learning alliance process; these include learning meetings, training, action research and demonstrations and strategic planning process. Embedded in these processes are the co-creation of knowledge and recognition of the roles of different stakeholders and their contribution and roles relating to integrated urban water management. Acquisition of factual knowledge and socio-technical skills are some of the ways that such process can contribute to innovation. These are similar to experiences described by Muro and Jeffery (2008) in their assessment of social learning for participatory decision making. Similarly, the issues of trust, transparency and openness also feature in the experiences of the learning alliance process.

9.4 Conclusions on Sub-question 3: How do the social and institutional dynamics of urban water governance relate to innovation in urban water management?

9.4.1 What are the early outcomes of the learning alliance?

A key point to note with regard to the process of building stakeholder engagement is that it takes some time before results or outcomes begin to show. The early outcomes of the learning alliance presented mainly in chapter 7 relate to the creation of knowledge and increased awareness of the roles and value of various stakeholders leading to improved stakeholder engagement. In addition, learning was expected to bring about various forms of change (Reed *et al*, 2010). Even though there were some higher-level changes that were observed, the early outcomes of the learning alliance process were more pronounced at the individual level. However, although these outcomes started at the individual level, with time, these outcomes translated to the organisational level. The conclusion on outcomes presented here, therefore discusses the initial outcomes at individual level and learning alliance (network level).

At the individual level – the learning outcomes observed are mainly changes in perspectives and behaviours (see Chapter 6). Individuals experienced learning through their participation in activities (learning by doing) – transformative learning and also through interactions that led to development of understanding of other stakeholders (communicative learning). Individual learning is characterised by increased trust and willingness to share more among members. Individuals seeing the learning alliance more and more as a legitimate source of information and trusting the results of research from the learning alliance. This shows a trust of participants and the process itself. The individuals felt comfortable to share their views. Individuals contributed to discussions and decision-making and took part in the achievement of results. They also took part in research. Some outcomes at the individual level showed that there is a development of understanding of issues around integrated urban water management (cognitive learning) (Bandura, 1971). and how the learning alliance improves their work (gaining knowledge that helps to improve their work – cognitive learning). Through the platform, individuals experience an improvement in relationships with other stakeholders and through that, shared goals and experiences. Relationships generally improved among practitioners and individuals increases their social capital and social network.

At the learning alliance Level: The learning process is through interactions, actions and observations. For example, through interactions on the demonstration, stakeholders were able to understand more about the work that the farmers do. The stakeholders also appreciated the use of waste water in urban agriculture and the role of urban agriculture in the urban water cycle whereas previously in the traditional scheme of things urban agriculture (water for agricultural use) is not considered part of the water supply system. The farmers through engaging with stakeholders and researchers were also able to improve on their farming practices with the two demonstrations on:

1. treatment of waste water using natural systems to minimise the health risk for consumers; and
2. recycling of nutrients in urine for agriculture.

The demonstration on recycling nutrients in urine changed the perspective of farmers on urine and the farmers who were part of the demonstration were also able to in turn explain the demonstrations to their colleague farmers leading to some changes in farmer perceptions. Through this demonstration, we notice outcomes at that practice level (farmers) and the higher-level outcomes at the policy level on the use of waste water for urban agriculture. The involvement of farmers is similar to user-led approaches described by Hall (2010) in the Agriculture Innovation Systems framework. Working with farmers provided an opportunity for social inclusion of often-marginalised groups. While the engagement of general stakeholders from different parts of the sector (see table 5.1, section 5.2.1) created an opportunity to integrate appropriate productive reuse of urban water for agriculture into the policy, legislative, regulatory, urban planning and decision-making frameworks at the municipality level and appropriate government level.

The learning alliance meetings participation has more of general practitioners in the sector as compared to the UA demonstration which was focused on a smaller niche group. The research and demonstrations served as a strategic niche for experimentation to facilitate the uptake of technical innovations by stakeholders. The learning alliances provide a space which considers organisational, institutional and political dimensions for the uptake of these demonstrations.

This is linked to learning (literature review on Wenger, 2000); where learning is experiential and based on experiences of members in a similar group (community of practice). The difference here is that the LA has more diverse participants than the CoP

(farmer group). It included researchers and other sector practitioners whose perspectives and learning was shaped by lessons learnt from farmers. While the work on CoP talks about improving practice, the lessons learnt from the UA transcends beyond the community of farmers to research and policy makers through the learning alliance. This means the learning alliance is not just for change at the practice level but also at a higher level, that includes policy making.

The extent to which a learning alliance can adapt to existing conditions is dependent on the institutional set up as well as the facilitation process, which sometimes acts like a translation process. It was noted that learning alliances evolved in their own manner as pertains to the existing local culture in the cities where they were implemented and thus, the outcomes of a learning alliance can be said to be strongly influenced by the local cultural setting.

My personal experience as a facilitator also showed that sometimes, the process of facilitation could be considered as a translation process (if we consider the different cultures or contexts that come into play within the learning alliance process). The facilitator acted as a translator across different stakeholder groups (domains) and across different activities. If the different stakes, interests and organisational cultures of learning alliance is considered as different languages converging at the same meeting. Looking at the LA as a process and in a similar vein, we then see the facilitator trying to act a translator, moving across and trying to make meaning out of the process while assisting others to also make same or similar meaning or perhaps helping them to develop meaning in their own “language” of understanding

At the institutional or policy level, various transformations were noted that could be traced to the engagement undertaken through the learning alliance process. These include such outcomes as the production of a strategic planning document and stakeholder participation: recommendations for a coordination mechanism, recommendations for a master plan, and proposals for a hydraulic model for the city, which are currently being implemented. LA discussions on social inclusion have contributed to pro-poor policies and the setting up of a low-income consumer support unit to cater for the needs of the low income communities; as well as stakeholders using discussions from the LA to develop policy documents for government. Other contributions include the learning alliance undertaking the process of stakeholder validation for reports; another is the setting up of a national learning alliance

platform (by other SWITCH partners) based on learning experiences from the Accra learning alliance.

The early outcomes of the learning alliance described above are generally reflective of the expectations for a learning process (Muro and Jeffery, 2008) where participants develop a common understanding of an issue leading to mutual agreement regarding solutions and concerted actions that respond to these challenges. The early outcomes of the LA process point to this process.

9.4.2 What is the influence of power relations and dynamics on the process of learning and how can this be assessed or mapped?

As noted from the literature review, the experience and outcomes relating to the social dynamics of learning alliance are important because relatively little is known about social dynamics in the process of social learning (Sol et al, 2013). It was noted from the stakeholder experiences that within the LA, there is space for interaction and learning through networking and information sharing. There is also a space for improving experiences and doing things differently where the learning leads to innovation. This innovation is then expected to lead to improved ways of doing things through good governance. This good governance is also created based on stakeholder empowerment through participation and inclusion of otherwise marginalised stakeholders. We see these dimensions coming to play in the learning alliances.

The social dynamics of the learning alliance process was shaped by the specific context of the process or platform, which considers various actors and their roles; the governance processes and stakeholder interactions taking place and the governance cultures (accepted rules of engagement and embedded cultural values) (Gonzalez and Healey, 2005) (see Box 2.5 subframe for analysis of governance and). According to Gonzalez and Healey (2005), understanding of the social dynamics within networks (in this case a learning alliance process) provides a reference point for building discourse and governance practices for similar initiatives in future.

For the context of the learning alliance, we note the diversity of actors and differences in the levels of actors coming into play. From the previous sections, we also note that the LA was made up of actors with **multiple interests**. The multiple interests determined the sub-groups of the learning alliance, but more importantly determined whether stakeholders were interested in being a part of the LA. The experience on the SWITCH learning alliance

showed that because the learning alliance was initiated externally as a project intervention, the project objectives shaped the nature of the LA activities and discussions within the learning alliance. However, as the learning alliance progressed, other activities that kept members interested in attending meetings and sustain their interest in the LA process. . Dealing with barriers such as communication, functions of organisations, limited cooperation and working together among key institutions, as part of the learning alliance was challenging at the beginning. There were entrenched systems of working in the cities and there was the need to have the right mix of stakeholders to deal with these institutional barriers. At the same time, the LA had to work with different levels of local government systems (national and local government and in the case of communities, community level leaders). Working across different organisations and government levels is a challenge to achieving innovations. This called for recognising the different roles played by the different levels of government and agencies and involving them as the LA progressed.

With regard to the influence of power relations, it was noted that there were varied relationships on different levels; both the project level (among project researchers) and based on interactions with stakeholders (among project researchers and city stakeholders who are part of the LA; also among the city stakeholders themselves). The varied relationships have an impact on the level of trust and openness in the learning alliance and sometimes influences the extent to which the outputs of learning alliances are accepted. Researchers were required by the project to understand the priorities of local users and take account of the prevailing institutional context in their research design. The LA provided a platform for the identification of issues for action research and the subsequent sharing of research results.

One dynamic that is evident here is the interest of project (or initiators of the learning alliance) versus the interest and motivation of stakeholders. To keep stakeholders interested and participating in the learning alliance it was important to undertake activities that resonated with the stakeholders.

Gonzalez and Healey (2005) indicate that the capacity to sustain a process as well has to have impact beyond the platform is dependent on opportunities. The LA process took advantage of opportunities provided by the engagement with stakeholders to make an impact on the institutional landscape. As noted, the facilitators identified opportunity driven initiatives to sustain the interest of stakeholders (section 8.3.1). The example is the

use of the RIDA in Accra as a point of engagement of the stakeholders. Similarly, in Birmingham, the use of the Eastside study and the use of City Water Tool provided opportunities for engaging with stakeholders. The composition of the platform itself also determined the level of kind of opportunities that were available. We see the heads of institutions and key donor partners, consultants as providing opportunities for embedding findings in the wider institutional context and projects. Involving farmers and key organisations provided opportunities for embedding the research findings in practice.

At the same time, it was important to keep the project objectives or initial objectives of the learning alliance in mind; given that the funding to support the learning alliance was based on particular goals and objectives. In the end, there was a need to balance the interests of stakeholders and project funders. In facilitation, stakeholder interests were paramount and in reporting back to the funders it was critical to highlight the key objectives that the learning alliance sought to achieve. The issue of funding and availability of resources is fundamental to the dynamics related to urban governance as pointed out by Gonzalez and Healey (2005). They recognise the struggle to mobilise resources as critical to enable the network or learning alliance (in our case) to challenge embedded governance relations, discourses and practices. This mobilisation of resources particularly at the institutional level is also seen as means to leave behind resources for future challenges. This suggest that networks could go beyond the time frame within which they have been set up to work. However, this will require institutionalisation. The process of institutionalisation was however challenging to achieve within the project related time frame of the learning alliances.

Another dynamic that needed to be managed was the role of researchers and the different researcher areas. Among project researchers, it was noted that each researcher had their own research area. In meetings, it sometimes happened that depending on which stakeholder groups were present, the discussed appeared to be geared towards one particular area. One of the ways of dealing with this situation in Accra was to have sub-working groups. Trainings were organised for members of these sub-groups as part of the learning alliance process (section 6.3.2, table 6.2). These training were focused on one particular subject area and allowed for a balance in dealing with research interests.

Balancing all these required facilitation of stakeholder interests and ensuring the interests of each stakeholder was adequately considered. Facilitation is therefore one of the key ways of dealing with stakeholders and balancing interests.

The role of a stakeholder group who appeared to be marginal in the institutional set up but played a key role in the learning alliance are discussed: These stakeholders are researchers who prior to the project were not considered in the formal institutional set up as being key stakeholders. Their role was on the periphery though in some cases some of the researchers played the role of advisors and consultants. While not considered the most influential stakeholders in the water sector (see section 5.2.4, figures 5.1 and 5.2), within the Learning alliance the researchers became very important; they had a budget to do research to support stakeholders and they provided stakeholders with information from their research. The information provided by researchers within the learning alliance was considered useful and reliable by the learning alliance members. As noted from stakeholder interviews, the stakeholders indicated that information was one of the key motivations for being part of the learning alliance. There were initial conflicts relating to project objectives, researcher objectives and interests of the city stakeholders but through facilitation and the trust that was developed over time, the LA members accommodated the different interests.

As noted from our definition and descriptions of institutions in chapter 2, institutions are the ‘rules of the game’ and as such shape the way we play the game on in this context, and shape how stakeholders think and behave in terms of urban water management. In our description of the institutional framework we have examined the laws and regulations, the stakeholder organisations as well as policies that shape thoughts about urban water management in the two cities. We have also noted that there are formal as well as informal institutions. Some studies indicate that institutions are not permanent and that they are transformed through policies and changing social norms. This will underscore the reforms and transformations of institutional landscapes that are noted across the cities. The learning alliances themselves also contributed to a change in social norms, by changing norms about stakeholder engagement.

Who initiates the learning alliance process is an important aspect relating to the impact on governance. Gonzalez and Healey (2005) note “*that local initiatives arising from neighbourhood mobilisation and civil society arenas have great difficulty accumulating*

sufficient power to shift the dominant governance cultures within which they are situated” pp2066.

We however, note from this study that depending on the level of stakeholders and the relative power and influence that the stakeholders have, the learning alliance could on its own be seen as a driving force when it comes to information. The legitimacy achieved by the city learning alliance was critical to making an impact and bringing about change in IUWM. This can be attributed to the networks that the learning alliances managed to build in the various cities. This assertion is supported by Gonzalez and Healey (2005) who recommend that socially innovative governance initiatives, especially those that are created by civil society need to develop multiple alliances and networks that can help to promote initiatives that bring about change in governance.

Apart from researchers, the stakeholders external to the project within each city who had a role to play in urban water management were invited to be part of the LA platform. In this regard, there was the need to recognise the different needs and different motivations of stakeholders. Selection of stakeholders was a complex process which was done through an initial scoping exercise, stakeholder analysis and later an institutional mapping process. These provided insight into which stakeholders were critical to the learning alliance process. The choice of stakeholders for the LA platform was mainly based on the roles played by the organisations within the larger water sector. Thus, in terms of partner organisations the choice was rather limited. The choice of individuals to be part of the LA was also determined by the heads of the organisations. However, with time and in some institutions, relevant individuals who had adequate interest and motivation to be part of the learning alliance were selected. The lesson is that the concept of choosing the ‘right’ partner-institution in an LA is very limited given the focus of an LA; however more space for choice exists with individuals and this can be achieved after the LA has functioned for some time (see chapter 8, section 8.2.1 and 8.3.1). The individuals with adequate motivation to be part of the LA continue to attend while those without interest will not attend. A constraint to organisational learning is the interest of the individual participating in the meeting (this also applies the other way round). There is always an issue between organisational interest and individual interest in this instance.

The interests and work of the organisations they worked for provided the basis of participation for some of the learning alliance members. In a situation where the

organisational interest is not aligned with stakeholder engagement or where participating in stakeholder activities is not considered to be a mainstream activity, the participation in the LA activities is only done when the stakeholder has time and also the results will not be fed back to the organisations. This risk of an individual attending an LA activity and not reporting back results to others within their organisations led to limited feedback in some institutions. Other constraints identified were the fragmentation of the sector and functional duplication of activities – having different functions of water lying with different institutions and having different mandates. Some individuals indicated that they were inspired to take up particular causes of action, but in the end, their work schedule or lack of funds or organisational support prevented them from taking their ideas forward. Their position (of influence) within their organisation was also a determinant of whether or not they were able to take their ideas forward. This suggests that organisational contexts limit the application of learning for individuals on the learning alliance platform. While there were some changes observed at the individual or sector level, the translation of learning to the organisation was limited. As such a lot of organisational changes resulting in individual participation in the learning alliance was not very obvious.

9.5 Summary of conclusions on the main research question

As stakeholder engagement and participation is increasingly becoming part of urban water management, creation of an enabling environment should be supported. Organisations and Government agencies in particular need to factor stakeholder processes as part of their work. No organization can on its own and with its limited resources bring about change and structural reforms without engaging other stakeholders who have an interest or are affected by the changes. The main aim for this study was to explore “The Scope of Learning Alliances as a Mechanism for More Innovative Urban Water Management” by answering the following question:

“How and to what extent can learning alliances influence and promote individual and institutional change for innovation; as applied in integrated urban water management?”

It was assumed that interactions and engagement through the learning alliance will lead to learning which will lead to innovations and change. In addition, it was conceptualised that knowledge generation leads to sharing and then use of the knowledge. Also individual learning leads to organisational learning and institutional learning. These though do not

happen in a linear manner. In the review of the learning alliance we have described the characteristic features of the learning alliance. We have analysed learning as it occurs at the individual level and within the learning alliance and how this is translated to organisation and institutional level changes. We have also explored how the assumed outcomes of the learning alliance emerged or otherwise in practice. Observations were based on data collected from individuals who participated in the learning alliance activities. Data was also accessed from learning alliance meetings and activities. The level of analysis looked more closely at:

1. individual learning experiences
2. general changes that occurred within the learning alliance
3. a few identifiable changes that occurred at the sector level/policy level

Reviewing and analysing individual learning experiences suggest that learning starts from the individual level and becomes shared at the collective level. Within the short time frame of the learning process, observations of change are more pronounced at the individual level. A review of the lifecycle analysis of networks showed that it takes a very long time for wider recognition and influence at the sector level. However, there were some initial outcomes of this learning alliance that pointed to some level of influence experienced at the sector level after 5-6 years of the learning alliance. While some changes were observed at the sector level and within the learning alliance itself, it was not very clear the types of changes that happened within the participation organisation through influence for the learning alliance. These were not very pronounced.

Challenging entrenched systems of working to bring about change remains a daunting task however the practice of implementing LAs have demonstrated that with the right process (in terms of design, facilitation, resources and trust), stakeholders may find incentives to adapt and become part of change. The changes that individuals' experiences in the LA have a large potential to then change the way organisations work.

To what extent can learning alliances influence change: The key finding of the study is that learning alliances to some extent can influence change? To a large extent the LA can influence large changes **informally** however with **time**, these informal changes then become visible in the formal structure. Changes that happened with the LA were very gradual. Formal and institutional changes take a longer period than the information changes within the LA as they may often require policy, regulatory or legislative changes.

The local cultural and institutional context within which the LA exists played a key role. For this reason, when implementing an LA process, it is critical to assess the existing situation particularly regarding individual and organizational interests and motivations as these are critical factors for bringing about change. Openness and trust as well as developing a sense of respect on an LA platform encourage people to respond positively to learning and changes. LAs are a platform that can be used as an avenue to scale up change; acceptance of ideas and people on the platform are important to encouraging changes.

While the group interaction within the learning alliance is an important driver for change towards innovation, the actual actions for change are however driven more critically at the individual level. The process that occurs is a social learning process and the learning emerges as a result of both interactions and facilitation. It was however observed that while a good level of learning was observed at the individual level, transformations of that learning to institutional learning was limited to some extent. It is expected that institutional learning will occur over a longer time period.

The critical barriers towards change include funding. This is explained by theories of planned behaviour, where stakeholders have an intention to act but are limited from taking the action by various constraints. The literature suggests that calls for sustainable water management need integration of approaches and stakeholder engagement. In practice however, this remains challenging for sector professionals as there exists a limited environment to support participating in external meetings with other stakeholders. While meetings are held on a 'need to' basis, there are challenges for stakeholders when they have to combine regular meetings and stakeholder activities with their day jobs, balancing the needs of their own day jobs for which they will receive "rewards" and being part of a learning process. Without a learning platform/process being situated in their normal work, stakeholders are not encouraged to participate. There is the need for formal or informal endorsement for participation on LAs. However, for individuals that see opportunities for personal development and learning through meetings, they make time and work around organizational spaces to be part of the LA process.

Another constraint noted as part of the learning alliance was the role of power relationships. Generally, at the end of the LA process, interviews with stakeholders indicated an acceptance of the learning alliance process. Some stakeholders specifically

indicated that the learning alliance could mark the point at which cities worked towards integration. The interviews further showed that some stakeholders moved from an initial position of indifference to a position more supportive of the learning alliance; especially as they got more engaged and felt part of the LA. Most stakeholders saw the LA as a means for gaining information and for building relationships with other stakeholders within the sector. They relied on the LA to reach some stakeholders who they would otherwise not have met through the formal institutional setting. The trust that was developed on the platform was also an issue that was raised by the stakeholders. This shows the possible potentials for using the LA as a mechanism for engaging stakeholders around water governance. The influence of the LA beyond the platform was however limited to some extent. In other SWITCH cities where the participation was from higher level stakeholders there was a clear influence on the city policies. This means that the authority and influence level of stakeholders who attend LA meetings are important in getting changes beyond the platform. Depending on the local context, the role of LAs with regards to decision-making was different.

A significant change noted was the participation of otherwise marginalised groups (community members and urban agriculture farmers). In section 5.2.3, a comparison was made regarding the role of the informal set up versus the institutional set up for water management. In Accra, the learning alliance provided a platform for the participation of marginalised groups in urban water supply, which created an opportunity for decision makers and planners to understand the needs of these groups and how these could be accounted for in planning for water services. Issues around demand and access were brought to the fore, particularly when the water company considered coverage (in terms of the extent of their infrastructure) while the users looked at access (in terms of the amount of water, they get and use and the frequency of supply). Through these discussions it became clear that there was the need to look at access as an issue. It also became clear that even though there is a perception that the poor cannot pay for services, in reality they pay far more than those directly supplied (outcomes from RIDA assessment in Accra, section 7.3.1)). Therefore, it became necessary to look at opportunities for direct supply to communities. The discussions and research further highlighted the barriers that the poor communities faced in terms of being allowed to access services. There were also discussions that helped the communities to understand the importance of ensuring that the water that gets into the communities is protected from illegal connections. Through the platform, both the suppliers and the users were able to better understand each other.

Platforms such as the learning alliance are useful for building trust between two groups that have a history of minimum trust and who do not regularly engage each other. The atmosphere of engagement was also managed so that it was not a confrontational situation, thereby allowing both groups to have a meaningful engagement. Similarly the farmers felt that their issues regarding water for urban agriculture was understood better by other stakeholders through the learning alliance. In general, through the learning alliance, the marginalised groups also felt empowered and were encouraged to be part of decision making. The decision makers on the other hand came to see that the marginalised groups were not as difficult to deal with as perceived when dealt with as partners and a practically equal footing. These experiences highlight the value of participatory governance for water management.

Some key outcomes were the changes in attitudes that were noted among the different stakeholder groups. In many instances, the LA also acted as an informal system that pushed an agenda in a non-threatening manner.

A comparison of the two cities, Accra and Birmingham provided an opportunity to explore experiences in two different contexts and to identify common trends as well as differences in the evolution of a learning alliance in a given context. The two cities provided comparative examples from a developing country and a developed country. Accra is also a national capital and the level of decentralisation with regard to water management is not as advanced (or evident) as that of Birmingham. In comparing the different cities, we see different ways of starting the learning alliance. The learning alliance in Birmingham began with a group that started looking at flooding and this continued with storm water management as a key research area for the researchers and the LA. The stakeholders in Accra were rather diverse. Apart from the group in urban agriculture that had some experience of working together, most of the LA members came together for the first time through the initiation of the project. We also see the learning alliance at two levels: at the city level (Birmingham) and the city level combined with a national level (Accra). Both learning alliances took advantage of opportunities presented to make contributions to projects (an example being the contribution of the LA to the Birmingham Eastside Regeneration study). In addition, both the LAs were able to significantly engage stakeholders through joint visioning and planning. A common experience of stakeholders in both cities was the motivation for attending the learning alliance which hinged on the perceived value (in terms of information shared or networking gained) which is beneficial

for either for the individual attending the meeting, the organisation of the individual or both. In both cities the networking and involvement of stakeholders ensured that information from the LA was shared across different stakeholders. Having information perceived to be useful to the organisation also opened opportunities to engage with companies such as the water company (in both Accra and Birmingham). In both cases, the water companies were not managed by city authorities, but by a private or limited liability company (government subvented). The value of a demonstration was important in both cities given that it gave the stakeholders something concrete to connect with. A challenge that remained was the longer-term sustainability of the platform beyond the project. As noted, the networks developed went beyond the project; particularly for the researchers, the networks became the basis of other projects and further research work in their fields.

9.6 Contribution to Knowledge

This study has provided knowledge and a significant extension of understanding on the role of learning alliances in integrated urban water management and further provides a framework on how this can be assessed. The study has contributed to an understanding of learning alliance in terms of

1. Establishment
2. Evolution
3. Processes
4. Outcomes

A clearer picture of what is meant by a learning alliance; as applied in the context of Integrated Urban water management, better understand the processes through which learning occurs, factors that affect learning, and has enhanced our ability to critically evaluate outcomes. The study also identified possible outcomes and how these might potentially contribute to the achievement of a more integrated approach to urban water management. In addition, the study provided insight into role of facilitation in enhancing and brokering the process of learning alliance, given that the alliances remained a facilitated process from beginning to end.

In addition, the study also provided an opportunity to look beyond just activities and events (like most studies do) to provide information on actors personal experiences in the learning alliance and the significance of what the actors have learned. This provided more insight into how learning occurs (Bos *et al* (2011), Hoverman *et al*, (2011))

Another contribution to knowledge is from the conceptual framework – which provides more layers on how to assess learning alliances, networks and multi-stakeholder platforms. This framework helps us to look beyond social learning as the main or only process for a participatory approach.

This conceptual framework developed for this study thus provides an alternative framework for examining learning alliance beyond just the usual focus on social learning. This framework which was based on the connection between what is read and practice; - was based on a series of inter connected concepts that were identified from reading and from my initial experience of learning alliance; with learning alliances; it is not only talking about a social learning process but also a governance process – innovative process (process within an innovative system) – interaction and collaborative process – cooperation towards a shared goal or dealing with a common problem.

While many studies focus to a large extent on the social learning aspect of learning alliances (Diduck *et al*, 2012, Muro and Jeffery, 2008), this study extends the focus to provide further insight into the other dimensions of learning alliances and provides further understanding into the conditions for decision making, cooperation and collaboration in the complex environment of water management. The study thus also focused on

1. Social learning
2. Innovation systems
3. Governance arrangements
4. Interaction and collaboration.

The experience of the learning alliance showed that for the different learning alliances and at different times, different dimensions of the framework come to the fore. The initial stages the learning alliance often focuses on interactions and later moves to knowledge generation and sharing that leads to learning. In the longer term, as the learning alliance moves towards maturity, changes in power relations and dynamics are noted, where the stakeholders and the conveners begin to work in partnership. At this point there is opportunity for innovations and improvements in governance relationships among stakeholders.

In terms of governance arrangements for water management, this study has provided insight into social dynamics and relationships within the sector and the extent to which the

learning alliance serves as a platform that promotes learning and innovation in IUWM. In terms of collaboration, the outcomes of learning alliance relating to the development of networks and partnerships for improved urban water management is significant in view of increasing global change pressures and uncertainties which require greater partnerships.

Furthermore, governance arrangements, involving city stakeholders in the research will lead to more effective research implementation and results that are more widely used within stakeholder agencies. In addition, the networking lead to a wider sense of the need for a shared vision for integrated and sustainable water management by key city stakeholders. Though formal meetings and engagements often end when the project comes to an end, there is the possibility of the LA to achieve some level of sustainability through the networks that has been developed. These become virtual networks that can be harnessed for building future partnerships. In addition, the social capital built as a result of planning together can be harnessed in developing other project; planning and implementation or ideas help new projects to take off more easily

Some challenges noted however were that;

1. The process is time consuming without immediate tangible results;
2. Institutionalisation was a challenge – however some aspects of the learning alliance continues; networks, use of knowledge product; joint planning, validation of sector results.

9.7 Implications for research, policy and practice

9.7.1 Implications for research

This study has successfully used a case study approach as a methodology for action research. This research was started based on practice; the idea of documenting and understanding the role of learning alliances in integrated urban water management came from my role as a facilitator in a learning alliance. The research question was thus formed based on my knowledge and understanding of the practice and implementation of learning alliances.

A significant part of this study makes use of the descriptive and investigative case study as a method of inquiry into the learning alliance approach. The cases outlined in this thesis are built from the observation of activities as well as stakeholder stories of their

participation. Chapter 3 provides details of the approach and methodology used in this study.

In designing the methodology for the research, researcher devised her own combination of different methods, given that this was research on learning alliances in which the researcher was also an active participant rather than a passive observer. On reflecting on the methodology used, these are the thoughts of the researcher. I noted from the review of literature on various methodologies that there was some guidance on different ways of applying case studies and undertaking qualitative research, however I had to develop a methodology to suit the approach I intended to use. The study successfully made use of a combination of qualitative and quantitative methods of research. While this sort of mixed method approach was adopted, the research leaned more towards qualitative research and made use of a lot of ‘story-telling’. The use of a story telling approach is challenging because it tends to focus on descriptions, but the ability of the researcher to create meaning and useful conclusions from the story telling strengthens the descriptive approach used. The evidence provided by stakeholders through interviews and evidence from activities are presented as stories. Key words and themes are identified from these and related to the framework for analysing data (section 2.3.8) and conclusions are drawn from these. The use of a conceptual framework provided tools for the analysis of narratives to draw conclusions. While most conceptual frameworks on multi-stakeholder platforms look at social learning as the main driving factor (Muro and Jeffery, 2008), this study adds dimensions on interaction and collaboration, innovation and governance to create a framework that considers different aspects of what occurs within the learning alliance process. This study provided information on processes that led to learning, inputs, factors and features that promoted or constrained change and innovations in IUWM and also explored the outcomes of these processes.

9.7.2 Implications for policy

Drawing on the conclusions of chapter 7, the few paragraphs refer to some key policy contributions made by the study. This study largely contributes to policies on urban water management and governance, including the funding of research and learning processes on urban water management. A review of some **policies** on Integrated Urban Water Management (see section 2.2) identified statements that implied that engagement of stakeholders is a means to achieving an integrated and sustainable water management. While these policies make statements on the need for networking and interaction among

stakeholders in the water sector, it is not clear what kind of mechanism or instrument could be used to achieve this, or how it can be done. Experience with learning alliances has demonstrated a number of insights related to this.

A major implication for policy and practice relates to the use of learning processes as a method of engaging stakeholders for integration. A well-refined and well-structured learning alliance with greater recognition in the sub-sectors can play an effective role in bringing about change in the sector and improving the acceptability of decision making in the sector across different stakeholder groups.

The desired outcomes of a learning alliance may not be achieved without a properly managed process. Without this, the legitimacy of outcomes and the impact they can make will be affected (Cowie and Borrett, 2005). This statement underscores the need for facilitation of a learning process. It should however be noted that facilitation of learning alliances has a cost and these costs need to be taken into consideration when designing or planning to implement a learning alliance. This points to a policy need for funds to be made available for the operation of a learning alliance.

Studies in the use of multi-stakeholder platforms for urban water management have indicated that researchers play a key role. It has been noted from some research that in the cases where researchers have strong input, multi-stakeholder platforms potentially have a future for use in urban water governance (Brown and Farrelly, 2009; Brown, 2008). This was explored in the SWITCH learning alliance process where researchers played a key role. The use of researchers brings in new insights and also promotes learning and innovation. This means that in addition to funding the operations of learning alliances, there should be policies that promote funding of action research into IUWM.

One of the lessons learnt is that the LA remained an informal structure and this asserts that formalisation or institutionalisation of the LA will always be a challenge. There is however a potential for this challenge to be adequately dealt with if the learning alliance finds an institutional home that is able to mainstream and budget for the activities of the learning alliance. This will require careful crafting of institutional policies that support stakeholder engagement as part of the mandates of sector organisations or a lead ministry. This will ensure that while meetings will remain an informal process of building networks and promoting learning, there is space for regular and formal meetings beyond a project context; thereby making the learning alliance a programme recognised by the sector.

9.7.3 Implications for practice

Contributions of this study to informing the **practice** of integrated urban water management (IUWM) are described, based on lessons identified from the early outcomes of the learning alliance as well as lessons for implementation of learning alliances indicated in chapter 8. In practice, the scope of learning alliances can be broad or limited. A learning alliance can also be targeted at creating either horizontal linkages or vertical linkages, or both. The flexibility of how a learning alliance can be established and run makes it suitable for participatory governance, particularly in areas where a lot of power exists within informal relationships, given that within a learning alliance, there are no strict rules. However, it is more challenging dealing with a wider scope and more stakeholders as compared to having a single theme with one focused demonstration. While having focus gives the opportunity to achieve goals more easily, including a wider group of stakeholders increases the opportunity or circle of influence of the learning alliance.

It was noted that for the learning alliance to have the level of influence required, the participation of the right stakeholders was necessary, in terms of the roles that they play (see page 232). For example, to influence policy, the learning alliance needed to have policy makers. To make changes to regulations regarding the use of waste water for urban agriculture, there was the need for regulators to be involved in the learning alliance. At the same time, while the participation of right stakeholder is required to implement particular actions regarding the LA or research results, it was important to have participation from all stakeholder groups that are affected by the different aspects of urban water management.

As noted earlier, in relation to IUWM, learning alliances provide an opportunity for researchers to work together with stakeholders to jointly carry out research and jointly create knowledge that can improve the practice of IUWM. While the researchers are held in high regard, there is also the chance that they end up becoming the sole source of information and everyone looks up to them. This may not however, sit well with some stakeholders who see researchers as far removed from practice. Learning alliances require participation from all, but the fact that stakeholders hold researchers in high esteem may lead to their over-reliance on the views of researchers, especially when it comes to decision making in the LA process. There may be a tendency to consider mainly the view of researchers without considering the views or experience of all participants. Where researchers are seen as the only source of credible information it can be a problem for the

alliance since it may end up proposing solutions that are far removed from their “reality” or the real issues on the ground.

In this regard, the design of learning alliances should be done in joint consultation with stakeholders. The aim of the learning alliance should be to work jointly rather than use it as an avenue just for dissemination of information (see figures 6.2 and 6.3 in section 6.3.1). A second recommendation for the implementation of learning alliances is that given that a learning alliance evolves based on the local context and set-up, there should be a space to allow the learning alliance to be self-evolving. This is consistent with the assertion that human beings are self-organizing, proactive, self-reflecting, and self-regulating and that within a social context, both the social structure and people’s agentic capabilities come into play (see reference to Bandura, 2001 in section 2.3.3). One circumstance that comes up in the management of interests and power relations, is when the interest of one stakeholder is considered more than another. The stakeholder whose interests are not considered will end up becoming a peripheral participant, or will lose interest altogether in participation. Such stakeholders may also not support the outcomes of the meetings.

Stakeholder interest in the LA is also based on local politics around water management. The local political context of a learning alliance and an understanding of the politics of urban water management in cities is therefore critical to the learning alliance process. While this was not extensively dealt with within the SWITCH LA process, it came up as an issue that affected the LA process. The implication is that when undertaking an institutional analysis of the local context for water management it is critical to explore the historical context as well. This allows us to understand which stakeholders have the power and how to include or work with these stakeholders within the Alliance. Building trust is an important aspect of developing an LA; however, it should be noted that this is a very gradual process which takes a lot of time (years) and requires careful facilitation and brokering of power relations among stakeholders. Facilitators then act as brokers and allow the process to evolve and take its own form which is reflective of the local culture (see chapter 5 on how learning alliances evolved in the different settings).

The process of facilitation should be independent and allow the learning alliance to evolve while at the same time gently shaping and directing the learning alliance in a non-intrusive manner towards shared goals and concerted actions. The facilitator or facilitation team should be a trusted broker given the openness and transparency required to sustain the

platform. There is also the need to allow adequate time for the outcomes of the learning alliance to emerge, given that it takes time for the LA to develop and grow. There is also the need to recognise the process of building the LA and developing relationships as LA outcomes should not just relate to the adoption of technologies or IUWM. In building relationships within the learning alliance, adequate attention should be given to the social dynamics and the power relations. Given that LAs aim to break vertical and horizontal barriers and provide an egalitarian space for learning, it is important for power relations to be recognised and adequately managed. This once again underscores the critical role of the facilitator.

In addition to facilitation, there is the need for what was referred to during the LA process as ‘champions’. These champions help to drive and sustain the process of learning alliance by providing leadership. In the case of Accra, the champion was a well-known respected researcher. Similarly, in Birmingham, the champion was a facilitator with years of practice and a network of practitioners supported by researchers who also had an interest in being part of the learning alliance process. These ‘champions’ supported progress by engaging the stakeholders who were part of the learning alliance. In some cases, they provided what can be described as ‘convening power’; their presence encouraged some stakeholders to attend meetings. At some point of the process, the learning alliance facilitators through building relations with the stakeholders also became champions moving the process forward and sustaining the momentum of the LA process. In designing a future learning alliance initiative, due attention must be given to the role of champions and these could be identified as part of the initial scoping process. This was tried by SWITCH in most cities where initially champions were assumed to be those with formal authority/ position with the water sector. However, it should also be noted that champions may also emerge as the LA process continues and these champions can be identified by taking note of who has the informal power or is respected by different stakeholders. In both cases, champions need to be supported to become an integral part of an LA process. Starting up and running a learning alliance requires training for both of facilitators and champions.

9.8 Recommendations for further research.

While the lessons outlined above are useful for future learning alliance initiatives, the study noted that the local context within which learning alliances are implemented play a key role. The local context includes the local institutional set up and the local challenges in urban water management. Given the dynamic nature of society and the interactions, it is

expected that different parameters may emerge in the future that will have an effect on the learning alliance process and the extent to which some of the lessons identified in this study may apply. There are some specific broader issues however that are relevant for any learning alliance initiative. These include the process of initial scoping and mapping of learning alliances. The critical area to assess is to identify more rigorous methods for institutional scoping and mapping. A comparative study on these methods and recommendations for which ones work better under which contexts are useful for studying learning alliances.

In addition, when stakeholders have been appropriately identified, more studies are to assess the methods that work best for getting the right stakeholders on board.

The variety of stakeholders within the learning alliance had an impact on the scope of discussions; within the Accra learning alliance the stakeholders were divided into working groups to allow for more engagement around a specific issue of interest. Further research can explore the extent of diversity among stakeholders in a learning alliance and the extent to which the diversity affects decisions and power relations in learning alliance as compared to having a group with more similar interests around the discussion. Participation of stakeholders were affected by a number of factors; one area for that further studies can explore is the impact of transaction costs on the participation of stakeholders in learning alliances.

There were different groups of stakeholders as discussed in Chapter 6 on stakeholder experiences. Some are enthusiastic while others are sceptical and there are still those that can be classified as neither. In addition, some individuals felt they needed more concrete practices to promote learning. (one possible area which has not been extensively dealt with but can form the basis of future research on the outcomes of learning is the role of learning styles or the effect on the effect of learning styles on individual learning).

It was noted that while the study looked at the innovations that occur through learning alliances. The experiences or lessons were built on individual learning experiences and changes that occurred within the learning alliance. For assessing learning alliances in future other studies can explore the development of framework for assessing organisational learning and institutional learning.

The study did not look extensively at gender-disaggregated data – (the sector itself did not have many women practitioners; in both cities there were not too many women. However, it should be noted that women still played key roles as researcher and facilitators and coordinators in the LA process). Across different countries, most facilitators were women. In terms of the two cities studied, there was a balance in the role as researchers and facilitators. However, from the stakeholders' side and on the farmers' side, there was limited participation of women. One research area is the impact of gender on learning alliances in natural resource management. Does participation of more women have an effect on the outcomes and what kinds of outcomes will a more balanced sector stakeholder participation lead to? For this, a study that provides an analysis of the contribution of gender to the design and implementation of learning alliances can be considered.

In terms of methodologies, other methods such as mixed methods maximizing the use of both qualitative and quantitative methods as well as the use of graphical tools may also be explored for the study of learning alliances and other multi-stakeholder platforms. More structured participant observer approaches for studying learning alliances need to be developed to enhance the assessment of learning alliance processes. Furthermore, the use of complex modelling systems such as agent-based modelling can be used to explore different aspects of learning interactions within a typical learning alliance. A related study; could be how quantitative and qualitative approaches can best be combined for the study of learning alliances, multi-stakeholder platforms and other social learning processes.

In terms of conclusions on learning alliances, an area for further studies are the sustainability of learning alliances and post LA impact evaluation studies. How can the impact of a learning alliance initiative be assessed effectively? This recommendation is made based on the researcher's personal experience where even several years after the learning alliance ends, references are still made to the LA and knowledge materials from the LA are still used. Further studies can also further explore the role and dynamics of power within learning alliances.

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Appendices

Appendix 1 Invitation to First Learning Alliance Meeting

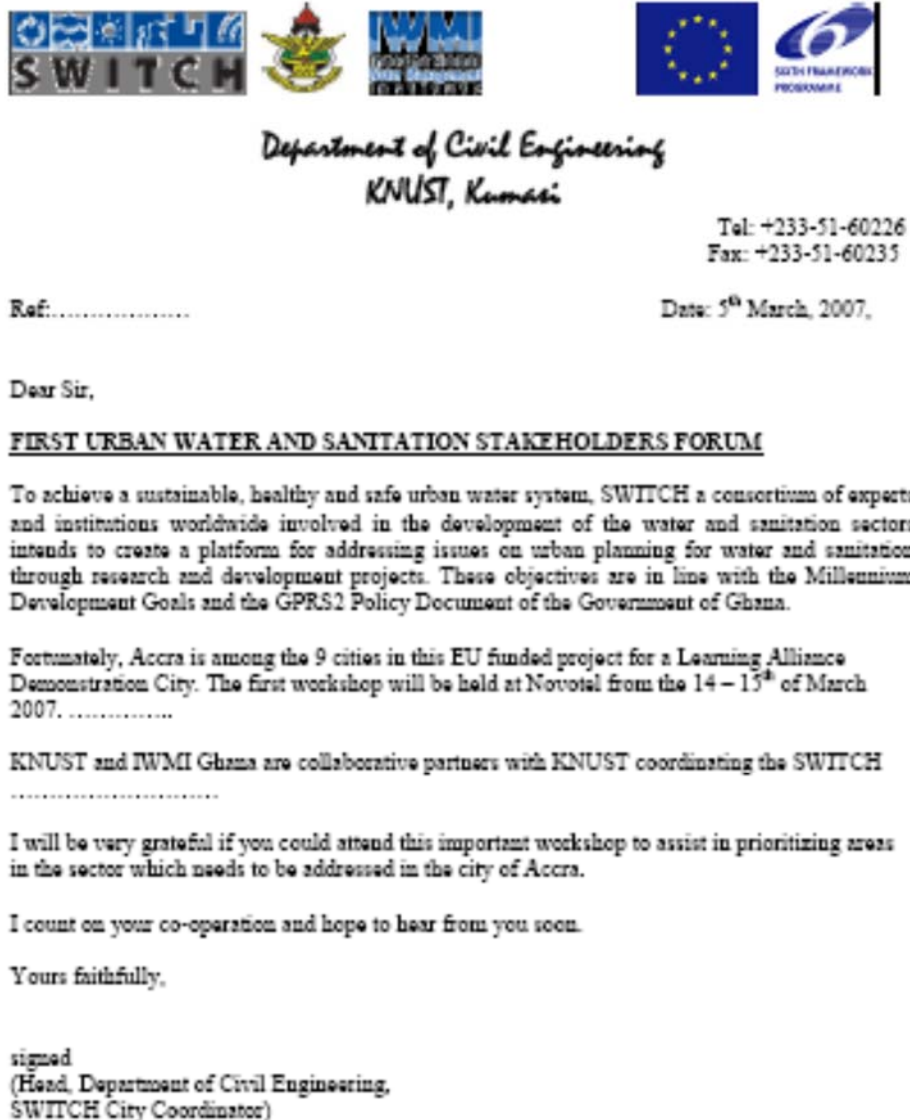


Figure A-1 Letter sent to stakeholders inviting them for the launching of LA platform

Appendix 2 Participants' expectations from first learning alliance meeting in Accra.

a) Pollution control

- *Solve pollution problems*
- *Measures should be found to combat water pollution*
- *Improvement and protection of water bodies in a city like Accra*
- *Improved waste management practices*

b) Water supply

- *Pertinent issues related to urban water supply identified*
- *Specific actions on improvement of the pro-poor water supply in urban areas*
- *Bring water to the rural poor*

c) Stakeholder Collaboration

- *Foster increased collaboration on water supply and sanitation issues amongst stakeholders*
- *Meeting and hearing from stakeholders*
- *Collaboration and support from stakeholders*
- *First step to bring stakeholders together to jointly learn and improve integrated urban water management*
- *Get to know interests and activities of different stakeholders*
- *Future cooperation*

d) Urban water Management

- *Better understanding of urban water management*
- *Participants well informed and knowledgeable on water management to articulate better on issues concerning water management*
- *A strategic action plan will be in place on urban water management*
- *To know that all is not lost and that the future is bright. We will consistently have potable water year in and out*

e) Clear outputs

- *That the workshop should come out conclusively on how Accra will have enough water on a continuous basis to support central sewerage system for the whole of Accra*
- *Realistic and practical deliberations*
- *Information on outcomes and activities of SWITCH, Accra and the way forward*
- *That at the end of the workshop we would have developed a roadmap to improve water management in the city of Accra in the next 1-20 years*

f) Understanding SWITCH learning Alliance

- *Clear understanding of IWRM and learning alliance*
- *Learning alliance would be understood as a critical component of SWITCH*
- *Understand the entire concept and approach of SWITCH and how it can be applied or implemented*
- *Planning and implementation knowledge of SWITCH*

g) Implementation

- *Effective implementation*
- *Decisions taken should be implemented*
- *The forum will be able to implement its programs to its logical conclusion*

h) Water use solutions

- *Technological solutions to efficient urban water use*
 - *Strategies for sustainable use of water*
- i) **Networking**
- *Exchange of professional ideas*
 - *Networking*
- j) **Efficiency**
- *Punctuality and timely delivery of sessions*
 - *Concise but participatory*
- k) **Others**
- *Not interested in a talk shop*
 - *Forum will address community behaviour change issues*
 - *Stakeholders commit themselves to the learning alliance*
 - *How can SWITCH bridge the gap between research and policy making to ensure sustainable water for all*

Expected Benefits from Learning Alliance

Local and National Authorities

Improve knowledge and strategies in proper waste management and water management

Water for all by year 2015 and in sustainable and adequate quantities

Integrated learning in water management for *sustainable development*

Improve livelihoods of urban population in relation to water use

I have been *made aware* of the how bad the water resource management situation is in Accra

Get a broad idea / **knowledge** in water delivery in Ghana

How to work with diverse groups of people

Research Institutes

Getting to **know opinions** of stakeholders, being **updated** on the process

A lot through **exchange of ideas**

Share ideas and be in the position to **take well informed decisions**. Be in a **better position to educate the public**

New knowledge from other members of the Learning Alliance

Improving innovative systems that will lead to interventions having greater impact

Issues in IUWM **identified and addressed**

Stakeholders in water sector would **come together** to tackle IUWM issues

University and Polytechnic

Understanding more clearly and of **key issues**

Education on IUWM issues, **being part of sector discussion**

Improved city

To learn about IUWM and network

Gather data to appreciate the situation better, so can impart knowledge to students

Media/press

Help me to **have information** on various organs connected with the water management and also the help me in my profession as a journalist

Expected Contributions to a Learning Alliance

Local and National Authorities

To **share** experiences of waste management practices in Accra

To **assist in discussions** to come out of *implementable recommendation*

City of Accra Profile

Incorporate SWITCH plans into development planning documents of AMA for implementation / **Provide information** about current water situation of AMA

Training of Trainers for sub-national staff to enable the dissemination of WRM information to community members

To **contribute the knowledge and information** that I have to the alliance

In the area of **managing** all streams that flow through Accra

Research Institutes

Gaining and **providing information** for decision support for IUWM

Science & Technology policy on waste/environmental Sanitation

Time / ideas / information

Contribute my ideas to ensure that the goal of IUWM is achieved

Technical **expertise - research and training**

Contribute to research, knowledge and information on IUWM

Raise awareness of problems in management of water in Accra

University/Polytechnic

Share ideas I have on the issues

Information/knowledge on water/sanitation issues, Experience as facilitator on KM issues

Facilitate the research component of SWITCH and the learning

Exchange ideas by asking questions and participating in discussions

Media/press

To write newspaper articles to inform and **discuss** with the public problems connected with my learning alliance

Stakeholders Doubts and Fears Regarding the Learning Alliance

Local and National Authorities

Financial implications for AMA

Outcomes left on the drawing board

How to pass on the knowledge to the public and beneficiary institutions

If funding becomes a problem and process is not hi-jacked by a few persons

Research Institutes

May not have the expected commitment from individuals - members looking for monetary benefits

Will there be decisions made for improvement of IUWM as a result of the LA?

Fear of "funding consultant"/ fear of not being able to measure the impact" of LA on IUWM

Universities/and Polytechnic

Sustaining stakeholder interest and involvement

Wide scope of technical areas, too many stakeholders could make coordination of LA platforms very challenging

Lack of interest / non-commitment from members

Attendance at stakeholder meetings

that decisions taken may not be implemented

Appendix 3: Narration of Learning Alliance Meetings in Accra and Birmingham (refer to Chapter 6)

1. First LA meeting

There were a number of expectations expressed by stakeholders who attended the first meeting. The intention was to subsequently draw on the issues raised to ascertain whether there were any changes in the expectations of stakeholders, how their expectations and participation changed over time and the factors that contributed to this. The expectations outlined during the first meeting can be grouped into specific expectations of the workshop and general expectations of the learning alliance.

Stakeholders were interested in finding solutions for pollution control (i.e. how to solve pollution problems and improve on waste water management practices). They were also interested in solutions to water supply challenges (i.e. improving water to urban poor, identifying issues relating to water supply and increasing coverage of water supply). This is closely related to stakeholder interests in Urban Water management where they were wanted to see the development of a strategic plan to ensure regular water supply, the development of a ‘road map’ towards improving urban water management and ensuring the availability of enough water. There were also stakeholder interests in water use solutions such as technological solutions to efficient urban water use, and strategies for sustainable use of water (within SWITCH this falls under Water Demand Management). A few stakeholders expressed interest in collaboration and networking among the different institutions. Details of the general stakeholder expectations are given in Appendix 2. It was noted that the stakeholder interest in Urban Water Management was generally linked to the water supply aspect of urban water management. Stakeholder interests and expectations could also be linked to the problems they identified during initial scoping. Researchers, however, made mention of waste water management during the presentations. Stakeholders also had an interest in solid waste management even though this was not part of the project mandate. In one of the meetings when asked to indicate topics which stakeholders felt should be part of the LA discussions, solid waste management was indicated, but was not discussed. An institutional analysis conducted by Green (2007b) as part of the SWITCH project also recognised the importance of solid waste management in urban water management.

After identifying the initial stakeholder expectations, there were a number of presentations including one on the learning alliance, what it meant and how the SWITCH project intended to use it. When asked about what they expected from the learning alliance process, this is what some stakeholders had to say. The responses are categorised into different stakeholder groups. Words related to the learning and innovation framework defined in Chapter 2 are highlighted.

Responses from stakeholders in Local and National Authorities

- Improve **knowledge** and strategies in proper waste management and water management

- Integrated **learning** in water management for sustainable development
- Improve livelihoods of urban population in relation to water use
- I have been **made aware** of the how bad the water resource management situation is in Accra
- Get a broad **idea / knowledge** in water delivery in Ghana

(Responses from Research Institutes)

- Getting to **know opinions** of stakeholders, being updated on the process
- A lot through **exchange of ideas**
- **Share ideas** and be in the position to take well **informed decisions**. Be in a better position to **educate the public**
- **New knowledge from other members** of the Learning Alliance
- Improving innovative systems that will lead to interventions having greater impact
- **Understanding** more clearly and of key issues
- **Education** on IUWM issues, being part of sector discussion
- Improved city
- **To learn** about IUWM and network
- **Gather data** to appreciate the situation better, so can **impart knowledge** to students

Responses from Media practitioner

- Help me to **have information on** various organs connected with the water management and also the help me in my profession as a journalist

It is significant to note that their expectations of the learning alliance experienced a slight shift after the presentation explaining the learning alliance concept. Not only were they interested in finding solutions to the perceived challenges of water management, but also they had added another set of expectations. The presentation on learning alliances therefore set a learning agenda for stakeholders. Their expectations changed from just having solutions for problems in water, to expectations about acquisition and sharing of knowledge. This underlines the effect of meetings as a means of communication and as a learning tool. Subsequent interviews of stakeholders who had participated in learning alliance meetings showed similar responses regarding what they gained from the learning alliance. All stakeholders made mention (explicitly and implicitly) of knowledge acquisition, knowledge sharing or knowledge utilisation resulting from their participation in the learning alliance. Some of their responses about their learning experiences are given in the concluding part of this section. Furthermore, when asked about what they expected

to contribute to the learning alliance a similar response regarding exchange of knowledge was given by stakeholders.

Responses from stakeholders with the City Authorities

- *To share experiences of waste management practices in Accra*
- *To assist in discussions to come out of implementable recommendation*
- *Incorporate SWITCH plans into development planning documents of AMA for implementation / Provide information about current water situation of AMA To contribute the knowledge and information that I have to the alliance*

Responses from stakeholders in research institutions

- *Gaining and providing information for decision support for IUWM;*
- *Contribute my ideas to ensure that the goal of IUWM is achieved*
- *Contribute to research, knowledge and information on IUWM*
- *Raise awareness of problems in management of water in Accra*

Response from Media practitioner

- *To write newspaper articles to inform and discuss with the public problems connected with my learning alliance*

Responses from Universities/Polytechnics

- *Share ideas I have on the issues*
- *Facilitate the research component of SWITCH and the learning*
- *Exchange ideas by asking questions and participating in discussions*

Comparing the responses above it can be noted that the responses from the different categories of stakeholders are very similar in terms of what they expect to contribute as well as benefit from the learning alliance. From the list of stakeholder expectations and contributions, there are a number of learning related words that are used by the stakeholders such as; **information, knowledge, sharing, exchange of ideas and participating in discussions**. Stakeholders also indicated a willingness to support with the generation of knowledge through the sharing of the information they have. Stakeholder contribution to knowledge generation is further discussed in section 5.2.3. Their willingness to share information and their use of the words highlighted above shows a view of the learning alliance as an appropriate area for sharing of information.

The outputs of the first learning alliance meeting included: a Vision of Accra Learning Alliance, an outline of research needs for the stakeholders, a list of institutional challenges and an initial action plan for the learning alliance process. The following were then identified as elements of vision:

- *Every household should have a meter connection with water flowing 24 hours a day, 7 days a week.*
- *10-15% physical losses and zero commercial losses in Ghana Water Co. Ltd operations.*
- *Quality of the treated water meets approved standards*
- *Efficient use of water by consumers*
- *Protection of sources of water from pollution*
- *Proper management of river basins to ensure high quality of rivers in the metropolis*
- *Accra would see waste as a resource (Futurgen) and make use of it.*
- *Accra is a clean city where public health is promoted and practiced*
- *Attitudinal change towards waste water management*
- *Waste management is carried out in a technical, financial, environmental and sustainable way*
- *About 80% of Accra to be connected to the central sewer system with an improved water and energy supply*
- *Complete elimination of diseases associated with water and sanitation*
- *Two engineered landfill sites and a recycling plant to recover waste.*

(Initial vision for Accra: source 1st La workshop report)

The vision statement and research areas identified seemed to focus on technical issues and solutions to pressing problems in the city. The first workshop recommended a lot of technical research looking at water technologies for water, technologies for waste water, understanding quantities of water needed and water for the urban poor. There was very little recommendation for research on institutional issues. From the beginning, the stakeholders showed an interest in solving the pressing problems for the city and they seemed to opt for technical solutions without much regard to institutions that would support the implementation of these solutions. Comparing this stance or outlined vision to earlier expectations given, it is noted that even though the stakeholders view of the learning alliances had slightly shifted to a position of wanting to acquire and share information, their longer term view or vision went back to the initial expectations or general expectations of what they wanted from the learning alliance. In this sense, while stakeholder views may change slightly or be influenced by presentations, it takes time to completely change or be suddenly realigned to a different direction. However after the exchange of ideas and discussions there were the beginnings of interest in knowledge and information sharing as indicated in their responses to expectations of the learning alliance. The response to the question below indicates an acknowledgement from one of the stakeholders of the importance of institutional arrangements. This is evidenced by the use of the word “should” in the extract of conversation shown below.

Question from one participant of 1st LA meeting: Anything that covered institutional arrangements and how various parties would work together?

*Response (from presenter of Group 1 Water supply group work): This was not discussed. It **should** have been included.*

(source: first LA meeting workshop notes/report)

At the end of the first meeting, a double dot³⁸ question was used to assess the level of knowledge gained as perceived by participants. This evaluation was done on the second day and so responses could not be obtained from all the registered participants (those who were from the press had to leave to cover other events). The questions asked were as follows:

- *How pleased are you with the way we have proceeded? .*
- *How much new knowledge have you got so far?*

Most stakeholders indicated that they had gained some new knowledge.

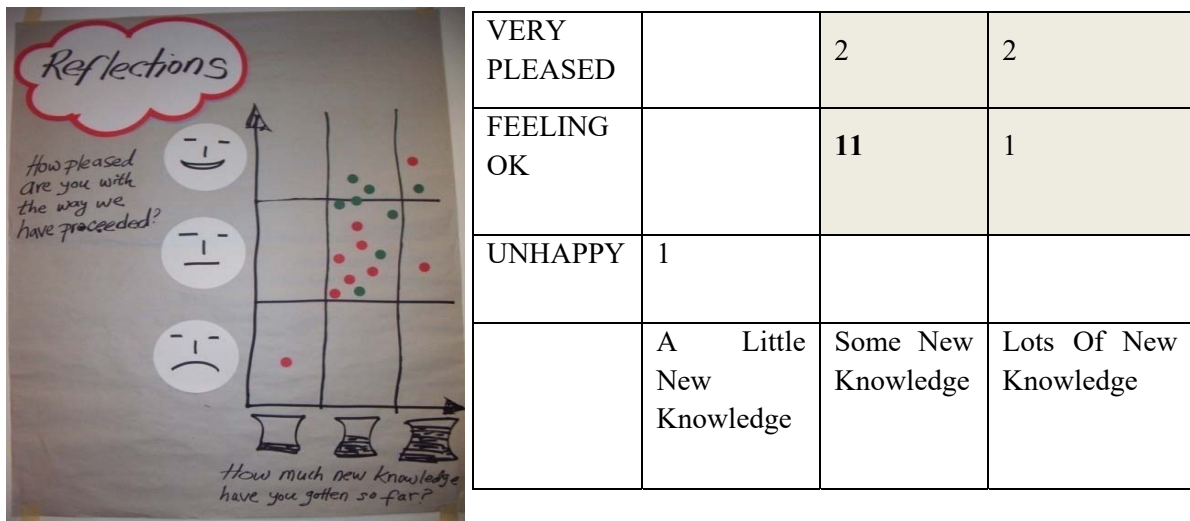


Figure A-2 Stakeholder evaluation of their participation in learning alliance activities

It can be noted from the diagram that 16 of the 17 respondents felt that they have gained some knowledge and were pleased with the way the meeting went. Most stakeholders are, however, found in the middle ground. Subsequently in other learning alliance meetings, a more detailed questionnaire developed by SWITCH was used to gain more insight into the experiences of participants in the meetings. A summary of responses by participants to the question of how much insight they had gained is presented below:

³⁸ Double dot refers here to 2 dimensional questions. The answer is given by placing the dot in a square that answers both questions at the same time.

Workshop No	Date	Yes	Some	No	Total no registered*
2nd LA meeting	Aug-07	7	7	2	40
training in Natural Systems	Sep-07	23	3	0	26
training in Urban Agriculture	Nov-07	12	2	0	20
IUWM 3rd LA meeting	May-08	9	4	0	16
4th LA meeting	Jun-09	18	4	3	40
Policy Forum	Nov-10	6	6	2	32

*not all the registered attendees submitted their evaluations forms.

The responses of stakeholders indicated that there was some knowledge acquisition in all the meetings. Less than 8% indicated in the meetings that they did not gain any knowledge. In 50% of the meetings all stakeholders indicated that they had at least gained some new insight.

2. 2nd Learning Alliance Meeting

The second and third meetings were training workshops and they will be discussed in the next section (5.2.2). The second learning alliance general meeting focused on the vision for the city. Methods employed to encourage stakeholder interaction among the learning alliance members included brainstorming, group discussions and reporting back, as well as question and answer sessions with presenters. The vision was refined and scenarios were defined by considering the situations together with uncertainties that could affect the achievement of the vision. The following factors were considered by LA members as being critical to the achievement of the vision.

- Population growth / Rural urban drift (2)
- Water demand (also including tourism sector (3), Industrial development)
- Politic commitment and interference (4)
- Public awareness and attitude (5)
- Effect of Climate change on water (6)

It can be noted from the factors listed above that stakeholders considered mainly physical or tangible changes and uncertainties. Water supply was once again highlighted as being very important in the factors that would affect the vision. My own reflection on this is that whenever I mentioned to stakeholders that the SWITCH project was about water management the first response I usually got was that it is good to get water for people to drink. This is also reflected in the National Water Policy where a greater portion of the policy focuses on drinking water supply (to urban and rural areas, water resources

management) with little emphasis on stormwater and waste water management. The general perception of water management is linked closely to water supply. This is further discussed in the institutional chapter. This perception therefore was an initial challenge to promoting the concept of integrated urban water management to stakeholders. Another factor that encouraged stakeholders to talk mainly about availability of water was the situation of about 50% of the population who were not connected directly to water from the water company. In the ranking given by one of the groups, 1 being the highest score, the influence of political commitment and public awareness was ranked 4th and 5th out of the critical factors listed. In the group however, the effect of climate change was not given priority. This could be due to the fact that they could not immediately conceptualise the effect of climate change on the availability of water. The ranking shows the importance given to institutional or social issues relative to meeting the demand for water in the context of achieving the vision for IUWM. However following discussions, issues about enforcement of regulations and laws (which are part of the institutional setup) were highlighted and made part of the critical factors that would affect the achievement of the vision.



Figure A-3 Example of Outputs of 2nd LA meeting

underlined
most likely.

FACTORS		SCEN 1	2	3
1. Population Growth Rate		high	<u>medium</u>	low
2. Economic Conditions	micro	slow growth	<u>strong growth</u>	strong growth
	macro			
3. Public Awareness		<u>improved</u>	strongly improved	decrease status quo
4. Power/Energy		<u>reliable</u>	non-reliable	non-reliable
5. Availability of Water		<u>enough</u>	enough	shortage

Most likely Scenario
Accra Medium Population growth rate. Strong growth in the economy. Improved public awareness with a reliable energy supply and enough water resources.

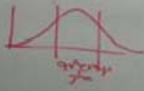


Figure A-4 Example of output from 2nd LA meeting

These factors were then used to generate the most likely scenario for the city of the future. The most likely scenario synthesised from the group discussion was as follows:

*Accra in 2030 is a city facing serious water and sanitation related challenges, but with some confidence in its ability to meet them. Very **rapid population growth**, fuelled in part by strong **economic performance** based on oil wealth, has led to sharply **increased demand for water** (10 times what it was in 2007). This demand has been contributed to by the rapid growth in the tourism and manufacturing sectors. However, while rapid, growth has not been chaotic – due in large part to the marked **improvement in political culture**, and related **enforcement of planning laws and other regulations, climate change** (and competition from outside the city) has led to a modest reduction in overall **water resource availability**, which together with the strong growth in demand presents major challenges. These are compounded by **lack of access to finances and land for new infrastructure**. However, **improved management and capacities** within both GWCL and AMA, **new technological options**, and **engaged and empowered citizens** inspire confidence that solutions will be found. (source: Visioning Workshop report, August 2008)*

The output of the second meeting was a refined vision/scenario, in which water resource availability and demand for water are shown again as being critical. However, in this scenario, other factors are brought in; these include improvement in political culture,

enforcement of laws and the engagement and empowerment of citizens. Influenced by the discussion of critical factors and availability of water, the part of the vision that was changed was the statement on water supply. Another point that was introduced was the “improved productive uses of water”, which was highly influenced by discussions on urban agriculture. It could be said that at the beginning stakeholders had an idealistic view of the solutions and expected a very high standard of solutions such as every household having uninterrupted water twenty-four hours a day for seven days a week and having homes connected to a central sewer line. This vision was described by one of the researchers/managers as a wish list. At this point without much information about the existing situation on which to base their decisions, the stakeholders could only hope for the best. At subsequent meetings a number of changes were made to the original vision. The vision and changes made are shown in table 5.1.

Table A-0-1 Comparison of revisions to original vision

Vision at 1 st meeting (month, year)	Vision at 2 nd meeting	Vision at 4 th meeting
<ul style="list-style-type: none"> • Every household should have a meter connection with water flowing 24 hours a day, 7 days a week. • 10-15% physical losses and zero commercial losses in Ghana Water Co. Ltd operations. • Quality of the treated water meets approved standards • Efficient use of water by consumers • Protection of sources of water from pollution • Proper management of river basins to ensure high quality of rivers in the metropolis • Accra would see waste as a resource (Futurgen) and make use of it. 	<ul style="list-style-type: none"> • 100% access to uninterrupted water supply • 10-15% physical losses and 10% commercial losses in Ghana Water Co. Ltd operations. • Quality of the water at point of use meets approved standards (Ghana Standards Board) • Efficient use of water by consumers • Quality of Surface water meets Ghanaian Standards • Improved productive uses of water for livelihood • Accra should have 50-80% of waste recycled • Accra is a clean city with drainage canals 	<ul style="list-style-type: none"> • 100% access to uninterrupted water supply (under discussion/construction) • 20-25% losses (physical and commercial losses) in GWCL operations • Quality of water meets GSB criteria • Improved productive uses of water for livelihood (micro enterprises and agriculture) • Collection of solid waste will be 90%. Accra will separate its solid waste • Integrated solid waste management (Collection, transport treatment and final disposal) of solid waste in a sustainable way. • 80% of its citizens practise good sanitation

<ul style="list-style-type: none"> • Accra is a clean city where public health is promoted and practiced • Attitudinal change towards waste water management • Waste management is carried out in a technical, financial, environmental and sustainable way • About 80% of Accra to be connected to the central sewer system with an improved water and energy supply • Complete elimination of diseases associated with water and sanitation • Two engineered landfill sites and a recycling plant to recover waste. 	<p>and street free of garbage</p> <ul style="list-style-type: none"> • 80% of citizens follow good sanitation practices (including paying for collection) • Integrated and sustainable waste management system • 70 % reduction in the incidence of diseases associated with water and sanitation • 100% acceptable level of sanitation facilities (healthy, clean , dignified and safe). 	<p>behaviours and willingly pay for waste management</p> <ul style="list-style-type: none"> • 70% reduction in water and sanitation diseases • 80% acceptable level of sanitation facilities • Accra is a cleaner city with good drainage systems
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During the evaluation, all participants who completed the evaluation forms indicated that they were satisfied with their level of involvement. Some participants felt inspired to take up some specific actions as a result of their participation in meetings, although not all proposed actions were followed up. 10 of the participants indicated that they had been inspired to take up a particular action as a result of this second LA meeting. Some were personal such as ‘*inspired to finish my masters theses*’, ‘*inspired to participate more in the LA*’ ; others were related to their work, ‘*inspired to undertake IWRM of basins*’, ‘*pushing organisations that are responsible for marine and lagoon quality*’; there were also generic ones aimed at the general public, ‘*educate people to pay for water use and prevent loss of water*’, ‘*spread the word that all hands are on deck to provide water for all commercial and domestic uses*’, ‘*proper management of garbage*’, ‘*begin thinking of using waste water as resource*’

3. Third LA meeting

The attendance at meetings dropped significantly during the 3rd meeting; at this stage; this could have been due to the fact that there was not adequate time between the coordination team agreeing on the meeting date and stakeholder consultation visits, the time available for preparation and the direction of the learning alliance. At this point, apart from the group working on the demonstration, the larger group of learning alliance members were not fully engaged. Even though the attendance at the learning alliance meeting was low, the results were important. During this meeting, the strategic planning functions of the learning alliance were highlighted and the main output of this meeting was the drafting of 10 strategic directions for IUWM in Accra. At this point it was noted that the RIDA exercise was a very important activity which would have a significant influence on the strategic planning process. A ToR was drawn up to give further guidance to what the learning alliance and the different working groups within the learning alliance were supposed to do. The lesson of this meeting also made the organisers examine the agenda and contents for the meetings and to ensure that there was adequate planning and prior information sent to stakeholders well ahead of the time scheduled for the meeting (at least 2 weeks before the meeting). After this meeting, the learning alliance team concentrated on the RIDA study. The 4th Learning Alliance meeting, which included the sharing of the results of the RIDA exercise, saw a significant increase in the number attending the meeting and the participation of the stakeholders was stronger.

4. 4th LA meeting

The main outcome of the 4th LA meeting was that the results of the study were shared with stakeholders for their input. The vision was further refined. Comparing visions across the 3 meetings, reference is once more made to table 5.1. Gradual changes in the vision from the different meetings are noted. The changes in the vision were influenced by meeting discussion and information from research and data analysis undertaken with the support of the learning alliance. Some aspects of the vision were deemed to be unrealistic based on information that became available to the stakeholders and in responding to the new knowledge available, changes were made to the vision. The first point of the vision, which is to have 100% access to uninterrupted water prompted a lot of arguments from stakeholders; while some stakeholders were of the view that that the point should be changed, others thought that it should be maintained, reflecting the realities on the ground. In the end a compromise was reached to keep the point and make the following note by it; (“under construction”). Though the point about ‘having 100% access to uninterrupted water’ was still maintained, adding the note allowed the meeting to move on. Changes to

other aspects such as the losses expected in the water supply distribution system were made. In the first meeting when that same statement was given as a point in the vision; a question was posed by one of the participants. The following gives a summary of the question and the response given.

Question *The target of 10-15%, should it not be higher?* (meaning the value of the figures for losses should be greater than what had been suggested)

Response *It is 40-50% in developed countries we are setting it higher.* (meaning they had set a higher standard by giving lower figures for losses)

(source; first Accra LA meeting report)

However in the 4th meeting there was no argument as to why it should be changed and it was easily changed without resistance from stakeholders. The vision statement about complete elimination of diseases associated with water and sanitation was also changed. There are other points in the vision that were changed and the argument that can be made here is that availability of information influenced the direction of the learning alliance. This supports the view of undertaking a RIDA exercise to ensure that the vision is founded on realistic information. Research on urban agriculture also influenced the vision because as mentioned earlier, in the 2nd vision a point was introduced about productive uses of water and in the 3rd revision we see this point about productive uses of water explicitly making mention of micro-enterprise and agriculture which is part of the research work which was shared with the learning alliances. Similar to the first and second meetings, we see the impact of meetings as a means of communication and also as an opportunity to share information with stakeholders to change their mindset.

Another change in the vision is the vision point that stated that ‘*about 80% of Accra to be connected to the central sewer system with an improved water and energy supply*’. In line with current trends of Integrated Urban Water Management and considering the fact that having a central sewer system would require the use of a lot of water, there was a move towards decentralised waste management rather than having a central sewer system. This vision point could be considered as an unsustainable IUWM goal and therefore appeared to contradict the vision of having waste management carried out in a sustainable manner. The change in this vision point could also have been influenced by information from training workshops in the use of natural systems for waste water treatment which was part of the workpackage workshops; which were then brought to the LA meeting. The point

was changed to allow for diversity of sanitation solutions ‘*100% acceptable level of sanitation facilities (healthy, clean, dignified and safe)*’. In the strategies subsequently developed, various options for sanitation were analysed. Following the refinement of the vision, a number of activities that were expected to support the achievement of the vision were identified.

In this 4th meeting, it is significant to note that stakeholders also called for the expansion of the learning alliance to include other stakeholders who were not there. This included other metropolitan and municipal assemblies apart from Accra. One issue raised in the discussion, which on reflection I found intriguing, was the request by stakeholders to include representatives of the City Authority (AMA) in the Learning Alliance meetings. In a study of the attendance list it is noted that there were always representatives from one office or another of the city authority in all learning alliance meetings; particularly from the planning unit and sewerage unit. However, it seemed to the stakeholders that members of the city authority were not there even though they had always been part of all meetings. My reflection on this was to question whether the other stakeholders did not make the linkage when introductions were done, whether they did not get to interact with all the participants, whether it was because the representatives sometimes did not make a contribution to meetings; or that generally they felt the city authority was not adopting some of the ideas of the LA so it meant that their representatives were not part of the meeting, or that the participants were not at the right level of decision making so it meant they were not representing the assembly. In an interview with one of the external researchers he indicated that he would have wanted to see people a little higher up the ladder represented at the LA meeting. Borrowing the words of one of the external researchers, perhaps these sentiments indicated that the stakeholders attending meetings were not of the right rank or that they did not have the right level of influence in their organisations; for example, a stakeholder who was interviewed and said they were at a relatively low rank in their organisation and what they said did not matter. If that was the case, then having stakeholders attend meetings did not mean that the information would get to the heads of the stakeholder organisation and further work would perhaps have been required from the facilitation team to get the high ranked stakeholders involved (see section 5.2.4 about the mayor’s comments asking why he had not been informed). It was also noted in other interviews that stakeholders talked about how to get high level politicians on board (see chapter on Innovations). Transmission of information by learning alliance members

back to their organisations and heads of their institutions appeared weak. These issues as noted will be further discussed in chapter 7.

After further deliberations, the stakeholder group formed during the 3rd learning alliance meeting (5.2.2.3) was reconstituted, though the membership institutions did not change much. They were still represented by

Table A-0-2 Learning Alliance Strategic Planning Working Group formed after 4th LA meeting

Group	Names
City-based researchers,	International Water Management Institute (SWITCH partner)
City authorities and planners	Accra Metropolitan Assembly (AMA)to chair (Representative from Sewerage Department)
Regional authorities	Water and Sanitation Monitoring Programme (representing water directorate of MWRWH) National Development Planning Commission (NDPC)
Water and Wastewater Operators/ service providers	Representative of AMA Waste Management Department
Regulators	Water Resources Commission
Developers/consultants	Institute of local government studies
Investors/ financiers e.g. donors in developing/ transition countries	
Civil society (Residents, Community and user groups , NGOs)	Coalition of NGOs in Water and Sanitation (CONIWAS Representative)
LA facilitator(s) and city coordinator(s)	

The experience from following up from the third meeting was that LA members were busy with their day jobs and sometimes saddled with other sector meetings and so they found it difficult to make time for meeting. However stakeholders indicated that they would make efforts to have time for the strategic planning group. One of the ways we thought to make stakeholders committed to the process was through having some letters of commitment. Thus, another output of the 4th learning alliance meeting was the development of a letter of intent; aimed at formalising relationships with stakeholders. Prior comments made by stakeholders during the previous meetings had indicated some interest in getting more

commitment from the different stakeholder organisations. These points raised about commitment of stakeholder organisations led to the drafting of a letter of intent and as part of the agenda for the meeting, stakeholders gave their input in finalising the letter. During the 4th learning alliance meeting itself these calls for obtaining commitment from stakeholder organisations towards implementing the plans developed by the learning alliance were reiterated and having a draft available supported discussions on getting commitment from stakeholder organisations.

Stakeholders discussed the contents of the letter and a final draft was agreed upon. The LA members were then given copies of a general letter of commitment to the LA process that was to be signed by their respective institutions. It was agreed the letters were to be signed by the head of the organizations and LA members were to present these letters as part of their reporting back from the workshop. A timeline was given as to when the letters were to be returned. This was agreed upon by all stakeholders though a few made the point that since some of them worked in the civil service their directors might not agree to sign. Learning alliance members agreed by consensus that the participants should still send the letters to their organization and communicate the organizational response to the learning alliance facilitator for follow up. This comment however raises a number of questions

1. The position of the stakeholders attending the LA meeting within their organisation and their ability to influence decision making in their organization
2. Whether the stakeholders attending the meetings were at the appropriate level
3. The need to do follow up consultations with stakeholders and organisations
4. The conflict of individual interest and organizational interest

These questions are dealt with in detail in Chapter 7 (on institutions in the LA). Despite the initial misgivings of some of the stakeholders, the learning alliance facilitator received letters of intent from some of the stakeholder groups. A stakeholder group that did not send back letters of intent was the City authorities. So while the LA members saw them as perhaps the most important stakeholder group and key users of the outcomes of LA research, analysis and discussions; their letter of intent was not forthcoming. During one of the follow up visits of the City Coordinator to the Mayor to present a copy of the RIDA, the Mayor expressed interest in the strategic directions presented and wondered how come he had not heard of SWITCH since he came into office. SWITCH discussions on strategic planning with the city authorities are discussed in section 6.3.3. A similar question can be asked about whether there is a connection between the LA and stakeholder organisations

and how this happens if stakeholders attending meetings do not report back; secondly another issue is once again about individual interest/organisational interest and the power of individuals attending the meeting to influence their organization (How far does his/her voice go?).

So while it was agreed that work could be done together, having a letter of intent did not change the way the learning alliance proceeded. In contrast, there were letters of intent for the urban agriculture demonstrations. In this instance, the stakeholders involved sent letters to show commitment of resources (e.g. time and use of laboratory facilities) to support the implementation of the demonstration. This letter of intent was around a concrete project that had been designed together with stakeholders and the project implementation plan was clear. It was therefore easier to identify what was needed from the stakeholders and their organisations and make the request to suit that; this was a more concrete way of getting letters of intent that yielded results.

Generally it was relatively easy to obtain letters of intent from the stakeholders after the LA had progressed to a certain point, as compared to trying to have letters of intent and MoUs from the first meeting. At this point stakeholders had developed better understanding of the learning alliance process and some stakeholders were already engaged in the action research related to the demonstration. Secondly, the letters of intent sent by the organisations were very general and most of them did not translate to measurable activities that were done together; this represents weak formal relationship. The relations are considered formal because there is written evidence on paper about the relationship and commitments, but weak because in reality there are few concrete activities that exist among the stakeholders. However letters of intent that were drawn up around the urban agriculture pilot yielded the needed response because it was clear what stakeholders could contribute (the contributions from stakeholders were tangible and well defined). It was, however, noted that at this point, through constant engagement with stakeholders, the LA facilitator was invited to be part of various meetings in the sector. These will be discussed when dealing with the role of facilitation in the learning alliance.

5. 5th and 6th LA meetings

The 5th meeting focused on information sharing; there was sharing with a larger national level learning alliance that had been formed after SWITCH. The larger National level learning alliance has a focus on the whole water sector in Ghana not distinguishing between

rural water supply, urban water supply and water resources management. The SWITCH Accra learning alliance focused more on urban water resources management including urban water supply and waste water management. The National Level Learning Alliance Platform (NLLAP) was formally launched in October 2009. The 2nd NLLAP meeting was jointly organised with the SWITCH Learning Alliance making presentations on the strategic planning process in Accra. A newsletter with the response of the meeting was shared with the wider sector³⁹. This allowed the LA to share and have discussions with the wider water sector in Ghana.

6th meeting for an update of research and finalisation of proposed strategic directions was held not at the regular venue but in smaller groups at the then IRC office in Accra. This meeting was slightly different from the other meetings in that there were fewer presentations and the groups worked together. Meetings provided a platform for open discussions/ comments about stakeholders at learning meetings.

Apart from the knowledge gained and knowledge shared, the various stakeholder meetings also allowed the development of rapport among the stakeholders.

“At the policy dialogue I enjoyed the encounter between the GWCL managing director and assembly (the MCE of LEKMA). GWCL complains that because they are not consulted, people take up their land/ e.g. space intended for pipes and tanks for [their private] projects. Bringing the 2 players together was good and useful. You haven’t measured it but if you conduct a survey or talk to the MCE about how he relates to GWCL he will attribute that to the relationship with SWITCH” (Baba Tunde, Stakeholder from NGO group)

Stakeholders also made new contacts and some of the stakeholders exchanged contact information during meetings. Towards the end of the project (2010), one of the external researchers said in an interview that it seemed to him that the stakeholders knew each other before the project. This view shows that the stakeholders were able to build relationships such that an external person could assume that they knew each other before the meeting. The stakeholders themselves made similar comments about the people they had opportunity to meet during the learning alliance meetings. This is what one of the

³⁹ More information on the National Level learning alliance (NLLAP) available from <http://www.washghana.net/page/769>

stakeholders who works with one of the regulatory agencies had to say about getting to meet people:

“[I] met a good number of people that I don’t normally meet. I realised that it is an opportunity to meet a lot more partners. Now I’ve started meeting some of them outside SWITCH meetings, working with EPA on sustainable development action plan. Some of the people I met at SWITCH were in my group. I have had new friends who are doing research – IWMI, WRI”.(RA, Stakeholder from Regulatory Agency)

Even though this stakeholder did not live in Accra, he showed an active interest in the learning alliance since the first time he attended (4th LA meeting). He was the first person to bring in the letter of intent from his organisation in response to actions decided on at the LA meeting. He saw it as an opportunity to expand his network and he maintained contacts beyond the learning alliance meetings. His statements also indicate developing collaborations and cooperation in that that having met people at learning alliance meetings, they became a part of his group at other sector meetings.

Another stakeholder from the city authority had a similar experience in terms of expanding his network.

*“It has helped us to access information easily. When we needed information I was able to call someone for information that I needed for planning. There was an instance when the mayor wanted to visit them [AVRL/GWWCL]. There was KSA and he was a great help [to facilitate the visit]. Because we met we were able to exchange contacts and we were able to make the link. It may have been difficult to do so [without having met him b4]”.***RO**

He also had a similar disposition as the previous stakeholder and showed regular interest in the learning alliance whenever he could make time. He describes the ease with which they can access information through the learning alliance. His statement indicates that his network and information obtained was useful for his daily work. The learning alliance team also relied on him for information from the assembly. He was also able to use the contacts in the learning alliance to arrange meetings related to his work. We also made contact with him to arrange for meetings with the planning officer and head of the assembly. The contacts made during meetings initially provided avenue for informal discussions but with time, the interactions among some of the stakeholders moved to the organizational level this is discussed further in Chapter 7.

Policy Forum

The final meeting which was dubbed a policy forum was to bring the heads of key institutions together to discuss how the findings of the learning alliance could be taken up. The need for such a forum and plans for such a forum started as far back as the 2nd Learning Alliance meeting on visioning when the need to involve policy makers was recognised. However, there was limited research and information available to share with policy makers, even though after the 2nd meeting a policy briefing note was developed. At that time there were also no clear strategic directions that could be proposed to policy makers. However with the development of the RIDA document which had been well received by other stakeholder groups, there was a felt need (both from LA members and the facilitation team) to then include policy makers.

The policy forum was held in November 2010 and it was the last meeting involving all the LA members within the SWITCH process. The invitation to the policy forum in contrast to the first invitation for the stakeholder's forum was signed by the Director of Water at the Ministry of Water Resources, Works and Housing. This shows some kind of transfer of ownership of the project from the researchers and institutions who convened it, to the Ministry in charge of water. The Ministry also hosted the meeting and provided a venue at no direct cost to the project. It was a well-attended meeting with about 35 participants made up of LA members and heads of some stakeholder organisations. The atmosphere of the meeting was a cordial one and stakeholders interacted with each other. In an interview one of the heads of local authorities who had been part of previous LA meetings, was asked about his expectations. He indicated his interest in seeing the development of policies based on the findings of the workshop. This indicates the legitimacy that the platform had assumed towards the end of the project.

Appendix 3b: Narration on Learning Alliance Training Workshops

Urban Agriculture Training Workshops

The focus of the urban agriculture training workshops was to help shape the direction of the research and to define the demonstration activities. Two main trainings were held at the beginning of the project. The training at the beginning shed more light on issues of urban agriculture and the workshop was used to obtain the interest of LA members to get involved in the UA research/demonstration. This was done through brain storming activities and group discussions during the workshops. While the training workshops had a lesser number of people than those attending the general LA meetings, there were different groups of stakeholders represented at this meeting:

- Teaching, research and service to community
- Provision of information
- Facilitation
- Policy decision making and support
- Capacity building and training
- Enforcement of laws relating to waste water management
- Applied research in integrated urban water management (IUWM)
- City co-ordination
- Water supply
- Managing the environment together with other stakeholders
- Monitoring of waste management activities at the sub-metropolitan area
- Developing water resources for agriculture and fisheries

During the evaluation of the workshop this diversity was noted by one of the stakeholders as being one of the things that should be continued is “Bringing people of diverse backgrounds to interact”.

Researchers gained insight about urban agriculture and the direction of research through discussions and contributions from the stakeholders in the training workshops. In these workshops, LA members supported the research team to prioritise which demo to select and the area in which to undertake the demonstration. For the other stakeholder groups, the training workshop for the urban agriculture provided further understanding for the topic. For example, one of the stakeholders who works as a regulator had this to say about her experience from the learning alliance discussion.

Felicity “For me, I have been well informed by SWITCH. I can stick out my neck and say the water they are using [for Urban Agriculture] is not bad; I have data to prove and even if I don’t have the information I can point it to them to contact this organization”.

This expression used by the stakeholders indicates not only confidence in relaying the information but also some level of confidence about the quality of information relayed based on available data. This was the result of her participation in the learning alliance.

The stakeholder in this conversation concludes with a statement which gives a clear indication of knowledge that has been gained about the responsibilities of organisations.

“...even if I don't have the information, I can point it to them to contact this organization”.

This particular stakeholder was very active and attended at least 5 LA meetings and 2 training workshops. She also took part in the research activity and continued other research work in urban agriculture with one of the SWITCH partner institutions working on urban agriculture. The training workshop was also used to plan the activities for the implementation of demonstration (which is discussed in section 5.3.4) and the training workshops were also used as avenues to get stakeholders to work together. In our meetings we had working groups that were formed to look at issues of productive use and how it fits into the city plan and the working groups also worked together to design the demonstration. Members of working group provided information (info sharing – link/move to section 5.3.4). At the end of the workshop, the participants indicated their satisfaction with the way the workshop went and apart from general logistics issues, they indicated they satisfaction with the following:

a) Content and Presentations

- The presentation and the subsequent validation and upgrading of issues was good and must be encouraged

b) Stakeholder Involvement

- The brainstorming session
- Excellent discussion, and good interaction

(source: workshop report)

The second training workshop was held in November 2007. It was to build on the outcomes of the first workshop and identify opportunities for the use of water in urban areas for agriculture and other livelihood opportunities. The training also provided the space for the discussion and selection of appropriate technology for the demonstration. Participants were introduced to the different tools and methodologies for action research and plans for the action research and demonstration in Accra were discussed. The methodology for the research included interactive presentations, discussion sessions, group work and case studies. When participants were introduced to the concept of action research, it was interesting to note during the question time that farmers said the action research cycle was similar to their practices they were already engaged in on the field. This was in response to one of the stakeholder questions about whether the action research will go on and on without the farmers getting to implement the results. The farmer said that they [farmers] already went through that cycle; indicating that they often tried out various methods of farming and try to improve on it as time goes by. The confidence of the farmer and the answer he gave to me indicated that he felt comfortable within the learning alliance and was also ready to be part of the demonstration process. A field trip was organised as part of the workshop to one of the sites in the city where urban agriculture is being practiced. At the end of the meeting, the evaluation by participants indicated that they had all gained some new insights into water use for urban agriculture and were satisfied with the issues that had been discussed. About 85% of the participants indicated that the training had

inspired them to take up actions in various areas including: advocacy and promotion of urban agriculture, undertaking further research and publication of articles on urban agriculture and the use of low cost, on-farm technologies to improve the quality of water. This percentage is high as compared to similar sentiments in other workshops. Interestingly one participant indicated his interest in being one of the SWITCH focal persons. The participants also indicated that they found the presentations and discussion useful and were also satisfied with the field trip. Participants indicated that the materials in the workshop were useful and 2 of them indicated on their evaluation forms that they wanted to have the information on a cd or on the internet.

It is interesting to note that participants began to ask for information on the internet. It shows that (1) they valued the information and were prepared to make the time to search for it or download it on the internet and (2) a changing interest in the use of the internet as a means of communication. Initially it was difficult to get through to participants through the internet. When the city website was put up it did not have many visitors, but with time it began to have visitors. The fact that participants said they were willing to find information on the net, even though at that time internet access was not that easy for me, demonstrated an interest in information. They however indicated that they wanted to have the information on the internet updated regularly to encourage them to visit the site more. The SWITCH Accra website was created in May 2007 and the following figures show the number of visits to the site during since its creation in 2007 to 2012, a year after the completion of the project.

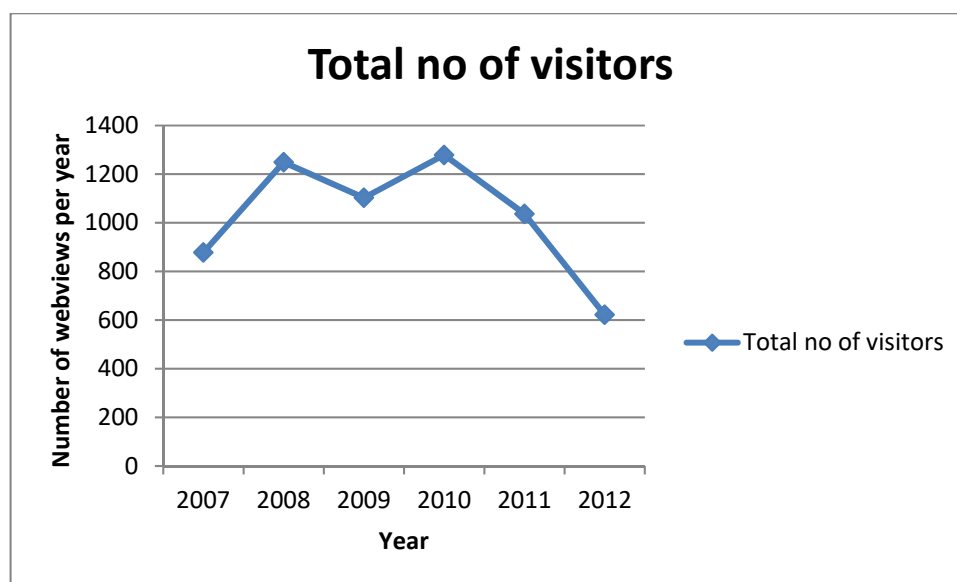


Figure A-5 Webviews of Accra LA website (www.switchaccra.wordpress.com)

The LA members also indicated that they wanted to have more information about the following subject areas from subsequent workshops:

- new low cost on farm technology options,
- health risk impacts using waste water for urban agriculture
- low cost on site waste water management and treatment

- principles of action research
- urban water for the agriculture in the city of Accra
- putting workshop conclusions into practice
- the efficiency of the low cost on farm treatment technology
- livelihood opportunities, link to irrigation of LA Accra
- research development
- sourcing for funding

(source; workshop evaluation forms, and workshop report)

Participants' requests for further information on a lot of topics around the workshop could be an indication of a thought provoking discussion/ workshop that has heightened their interests in those topics. I noted from my observation of other workshops that stakeholders indicate interest in learning more about some topics when they have been inspired to take up an action. After the meeting, the small group that had been formed together with the city coordinator and 2 external researchers has a meeting to follow up on suggestions and recommendations from the 3 day⁴⁰ meeting.

Natural Systems Training Workshop

Three Training workshops were organised. The different thing about these training workshops was that stakeholders provided part of the funding to support the total cost of the meeting as compared to the general learning alliance meetings for which the cost was totally borne by the SWITCH project, paid for by the participating institutions. Considering initial comments made by stakeholders about funding challenges and unavailability of funding, it was significant to note that city authorities supported their employees to participate in training workshops. This underscores a certain value recognised by the users of the information from the training programme resulting in a change in perception around funding of training activities.

The first training workshop was held in April 2007. This meeting was initiated by the workpackage leaders to give further information on workpackage to the LA members and to identify potential issues that the workpackage research could deal with in Accra. Unlike the first LA meeting, this training workshop had a smaller number of participants who were mainly made up of the LA members who were in the sanitation group during the first learning alliance meeting.

In September 2007 there was second 5.3 training on options for waste water treatment using natural systems. This training was held by demand from the learning alliance members and had more participants than the first training workshop. This training was also open to other participants who were not necessarily part of the Accra Learning alliance. As this technical training was relevant across the country, we had about 25 participants from municipalities all around the country who paid to attend meeting. This contribution

⁴⁰ Notes about number of days for meetings; and times for meetings. Initially had 2 day meetings, training had 3-4 days training; last meeting was half a day for policy makers. 5th meeting was divided into small working groups

to the meeting shows a change from the initial point where there was no input from stakeholder for the project apart from the match funding provided by the SWITCH partners to a point where some small investment is made by learning alliance members. There were only a few people from the LA – 60% of participants were not part of the LA. Those that were part of the LA mentioned that it would be good to have other similar workshops addressing similar problems. Building capacity was considered to be important. There were participants who came all the way from the Northern part of Ghana who were sponsored by their assemblies to be part of the project. Having a meeting that is open and relevant to different areas of the country is one of the means through which the LA/training could scale up or present the research results at a scale. In this meeting, we did not have to pay for travel costs and participants also made a contribution towards some of the meeting costs. This was the first meeting that we didn't have to reimburse people's cost of attendance. I found this very interesting because the review of the meeting was good. This was a step to move towards mobilising money for this kind of workshops. We engaged with the heads of departments in stakeholder institutions so they were convinced to pay for the people coming to the workshop. This was one of the objectives that was set for the LA at the inception of the project, that with time, stakeholders would contribute to the meetings and fund all activities of the LA (this will be discussed in the institutional chapter 7).

The participants felt they had learnt a lot and they valued the new insights they got (based on information from evaluation forms). 23 (88%) out of the 26 who completed the evaluation forms indicated that they had received a lot of insight. The rest indicated that they had received some level of insight. None of the participants indicated that they had not obtained insight. My own reflection of this workshop is that I noted participants seemed to enjoy the training, they interacted a lot and asked questions and were pleased with the field trip. Evaluation of the workshop also indicated that participants were interested in knowing more about faecal sludge management in subsequent workshops. This could be due to the challenge of not being able to adequately manage faecal sludge in the assemblies. It would seem that the issue of faecal sludge management⁴¹ was very critical to the assemblies but it was not part of the workpackages (4.3) that we were part of. We however collaborated closely with the leaders of these workpackages within the project to support the training programmes of these workshops.

A third training workshop also on faecal sludge management was organised in July 2010. While I was not present at this meeting, secondary information received indicated that the meeting had a lot of participation (more than 30 participants). The Ministry of Local, Government and Rural Development with support from one of the donor agencies paid part of the cost of the meeting. This contribution shows another change in resources leveraged from stakeholders in the learning alliance. Unlike the first meeting there is a significant contribution from a stakeholder organization at the national level. During the

⁴¹ The RIDA analysis showed that there was no treatment of FS ongoing in the city and that FS was dumped into the environment.

evaluation, stakeholders expressed their satisfaction with their level of involvement and knowledge obtained from the training workshop⁴².

The training workshops for the workpackages were used differently. In one instance to plan and design a demonstration together with stakeholders and in the second instance, to give stakeholders further insight into some IUWM concepts discussed at meetings. Both training workshops resulted in enhanced engagement of stakeholders to work together. It also served as an avenue of sharing information perceived as useful by stakeholders. In some of the training workshops, learning alliance members were given certificates to show that they were part of the training exercises. Attending learning alliance meetings and being part of the training were important to some of the participant who include their attendance at meetings on their CV.

CT “On my CV I have SWITCH; the training programmes where they issued certificates, it is on my CV.”

Felicity “I remember I added it [referring to her membership of the LA] to my last EPA [promotional] interview; I mentioned it and they asked me what it is about they asked me about it and I said we want to use waste water for profitable use; we take the water and use it for agric. They said it is a good idea. And I said it is even a sanitation issue. I wrote in my last promotional interview.”

These 2 stakeholders attended almost all the learning alliance meetings and training workshops and took part in the field studies as well as demonstration activity research. Their comments showed the value they put on the learning alliance meetings and could perhaps explain why they often attended LA meetings. Their confidence in putting the learning alliance on their CV or on their promotional reviews indicates their acceptance of the legitimacy of the learning alliance. However, not all stakeholders could have their participation contribute directly to promotion in their organisations. One of the participants from one of the Universities in Accra indicated during one of the meetings (referring to time constraints of having to attend every meeting) that the Universities did not necessarily consider these external activities as relevant to promotion and that they would be more interested in the papers written and students she was teaching. Another learning alliance member (Jane) mentioned the fact that the coordinators could have invited professional bodies to be part of the meeting to give further legitimacy to participation in meetings.

“...When someone goes to deliver a seminar or presentation; he/she can put it on his or her CV; I am wondering how we can begin to think of what can we do it to make it important for people to want to come; for example, for professional bodies (what Grief is doing) we have CPD [continuous professional development] and there are

⁴² As compared to the general meetings, stakeholders participating in the training workshops stayed to the end and completed the workshop forms. Participants leaving before the end of the meeting were sometimes a challenge for meetings; in one meeting one of the participants indicated as part of the expectations that he hoped all participants would stay till 5:00 pm. The time that participants could have for meetings was a challenge and in interviews these were mentioned.

certain number of seminars you have to attend which contributes to CPD; it makes people want to come”

The mention of GHIE (which is the Ghana Institution of Engineers) compares with how the Birmingham Learning Alliance made links with the water group in the Institution of Civil Engineers (ICE), UK. Comparing this to the LA Birmingham, the professional body, The Chartered Institution of Water and Environmental Management CIWEM was invited to be part of the LA. In Birmingham facilitators played a role in linking up the project with professional bodies in water management, CIWEM and ICE. Interview with the facilitators indicated that SWITCH Birmingham was a member of the review group for making space for water. SWITCH was also part of the ICE Water Group international body and they were part of organising a workshop in London where SWITCH was presented. Representatives from CIWEM were also part of the SWITCH Learning Alliance meeting and the facilitator made efforts to link up with Young CIWEM to get interest from young members in the SWITCH project.

Appendix 3c: List of Stakeholder organisations represented at various learning alliance meetings in Accra

	Stakeholder organisation	Activity/ no of people attending						
		Initial scoping	1st LA meeting	2nd LA meeting	3rd LA meeting	4th LA meeting	5th LA meeting	Category based on attendance
1	EPA	2	2	1	1	2	2	core
2	AMA	8	7	1	3	2	4	core
3	GWCL	2						new
4	HSD	1	1	1		1		core
5	Times	1	1					once only
6	MWRWH	2	2			2		new
7	KNUST	1	5	5	3	3	3	core
8	MEST	1						once only
9	MLGRD	3	1	2		1		core
10	CWSA	3						once only
11	WB	2	1				1	new
12	WRC	2	1	2	2	1	1	core
13	CONIWAS	1				1	3	new
14	WATERAID	2	1			1		new
15	TREND	1	1	1		1	1	core
16	PURC	1	1			1	1	core
17	PARLIAMENT	7						non-member
18	PLAN	1			1			new
19	STEPRI	1	1	2				core
20	CAW	4						non-member
21	KFW	1						non-member
22	CIDA	1						non-member
23	DANIDA	2						non-member
24	EU	2						non-member
25	DFID	2						non-member
26	RNE	1	1					new
		55						
		26	14	8	5	12	7	

Additional stakeholder groups that were not part of initial scoping but attending 1 st LA meeting								
27	AVRL	-	4	1	1	1	1	core
28	WRI		1	1	1	1	1	core
29	IRC		1	3		3		core
30	IWMI		4	4	2	4	4	core
31	NRI		2					once only
32	UNICEF		2					once only
33	journalists/ reporter		13	5				new
34	Accra Polytechnic (now Accra Technical University)		1					once only
			68					
			6	3	3	3	3	
			2	1		1		
Additional Stakeholders that attended 2 nd LA Meeting								
35	Assembly Men from Teshie			2		2		new
36	other community members			3				new
37	Farmer			1		1		new
38	UNESCO-IHE			1	2		2	core
39	Enterprise works			1	1		1	core
40	Volta Basin Dev. F			1				once only
41	Tech. Uni of Hamburg			1				once only
42	MOFEP			1				once only
				52				
				6	1	2	1	
				2	1		1	
Additional Stakeholders that attended 3 rd LA meeting								
43	ILGS				2		2	new
44	Mime Consult				1			once only
45	Valley View University				1			once only
					31			

					16			
					3	0	1	
Additional Stakeholders from 4 th LA meeting								
46	People's dialogue					1		once only
47	Safi Sana					2		once only
48	WashCost					2	3	new
49	NDPC					2		new
50	Nii Consult					1		once only
51	CWSA					1		new
52	Lekma					1	1	core
53	RCN/TPP					1	1	new
54	WSMP					1	1	new
55	Statistical Service					1	1	new
						59		
						10	5	
Additional Stakeholders at 5 th LA Meeting								
56	Church of Christ						1	once only
57	UDS						1	once only
58	GII						1	once only
59	GWJN						1	new
60	triple-s/agua consult						1	once only
							57	

List of attendees to Training Programmes

List of Registered attendees to 1st Urban Agriculture Training Workshop May, 2007

SN	Institution	Role/ Responsibility
1	KNUST	Teaching/Research and service to community
2	MoFA, Regional Agric. Directorate	Regional crops officer
3	IWMI	Providing Information, capacity building, policy support
4	KNUST	SWITCH LA Facilitator
5	AMA, Member	Chairman: Food and Agriculture sub-Committee, AMA

6	CACS/ University of Ghana	Lecturer: Agriculture Economics and Agribusiness
7	IWMI	Research officer, PhD student working on contamination pathway and identification and risk reduction
8	IWMI	Researcher/Project Leader
9	IWMI	Knowledge Management and information /research
10	IWMI	Capacity building /Training officer I
11	Metro Public Health Department (AMA)	Enforce Laws relating to waste water management, Ensure that safe water is only made available
12	IWMI	Applied Research in IUWM with national partners
13	KNUST	City Co-ordinator
14	IWMI	Student internship-EFFFL-(Masters)
15	Aqua Vitens Rand Ltd.	Proper water supply
16	EPA	Managing the environment together with other stakeholders
17	CSIR, Water Research Institute	Research Scientist/ researching into the quality of the potable and wastewater from all the sectors of the economy and offer advice on these resources
18	AMA, Waste Management Department	Monitor waste management activities at the sub-metropolitan area
19	GIDA	Develop water resources for agriculture and fisheries
20	AMA Planning and Coordinating Unit	Planning Officer

List of Registered attendees to 2nd Urban Agriculture Training Workshop

	Organisation	Position
1	IWMI	Research Officer
2	NRI, UoG,	head, livelihoods and institutions group
3	LA Farmers Association	Farmer
4	University of Ghana	Lecturer
5	ETC Foundation	Sr. Advisor
6	MoFA	Regional Agric officer (crops)
7	Dzorwulu co-op vegetable farmers society	Secretary
8	AMA WMD	chief environmental health officer
9	Swiss Federal Institute of Aquatic Sci &Tech	Department of Water and Sanitation in Developing Countries, Eawag, Sandec
10	Environmental Protection Agency	Principal Programme Officer

11	MoFA (AMA)	
12	CSIR Water Research Institute	Research Scientist
13	IWMI	Project Assistant
14	Accra Metropolitan Assembly	Assembly member
15	KNUST	SWITCH LA facilitator
16	IWMI	Research Officer
17	IWMI	
18	IWMI	
19	IWMI	
20	KNUST	Head, Civil Engineering Dept

1st Training on Natural Systems for Waste Water Management

	ORGANISATION	POSITION
1	KNUST	Head, Dept. of Civil Eng/ City Coordinator-SWITCH
2	KNUST	National Service Personnel
3	KNUST-SWITCH	Facilitator
4	IWMI	Scientist
5	IWMI	Researcher
6	Channel R	Reporter
7	EPA	Deputy Director
8	AMA	Principal Env. Health Tech.
9	STEPRI	Economist/Researcher
10	AMA	
11	EPA	Director
12	Accra Polytechnic	Lecturer- Building & Civil Eng. Dept.
13	AMA	Head, AMA Sewerage Unit, Project MGR – ASIP
14	IWMI	Senior Resource Officer
15	Enquirer	Reporter
16	Top Radio	Reporter
17	The Ghanaian voice	Reporter
18	IWMI	Senior Researcher (SWITCH Researcher)
19	MWRWH (Water Directorate)	Project Officer

2nd Training for Natural Systems in Waste Water Management

	Organisation	Position
1	GA West District Assembly	Environmental Health Officer GD 1
2	AMA/Waste Management Department	Chief Env. Health Technologist
3	Pantang Hospital	Estate Officer

4	University of Cape Coast(Directorate of Phy Dev & Estate Mgt)	Civil Engineer
5	Universtiy of Cape Coast	Senior Architect, Ag W/M Engineer
6	Waste Management Dept. A.M.A	Environmental Health Officer
7	Valley View University	Project Coordinator of Ecological Water Cycles Programme
8	Techiman Munincipal Assembly	Environmental Health Officer
9	Kumasi Metropolitan Assembly	Environmental Health Officer
10	Wassa West District Assembly	Environmental Health and Sanitation Officer
11	GreenCylce Technologies	Design Engineer
12	Valley View University	Ecological Sanitation Manager
13	Wa Municipal Assembly	Principal Env. Health Technologist
14	University of Ghana	Site Engineer/ Ag. Deputy Director
15	Accra Metro Sewerage Unit	Project Accountant
16	Accra Metro Sewerage Unit	Head of Unit
17	Accra Metro Sewerage Unit	Principal Env. Health Assistant
18	Accra Metro Sewerage Unit	Ag. Plant Manager
19	Accra Metro Sewerage Unit	Mechanical Clerk of works
20	Accra Metro Sewerage Unit	Mechanical Clerk of works
21	Accra Metro Sewerage Unit	Project Supervisor - KLERP
22	Accra Metro Sewerage Unit	Mechanical Clerk of works
23	Accra Metro Sewerage Unit	Assistant Chemist
24	Accra Metro Sewerage Unit	Environmental/Health Engineer
25	AMA - ASIP	Sewerage Engineer
26	GA East District Assembly	Environmental Health Officer GD 2

List of Registered Attendance to Policy Forum

	Name of Organisation	Position
1	PURC	Director, Water
2	AVRL/GWCL	General manager
3	AVRL/GWCL	Chief Operations Officer
4	Ministry of Local Government	Snr. Development Planner
5	EPA	Principal Programme Officer
6	Rapha Consult	Director

7	CSIR-WRI	Snr. Research Scientist
8	WRC	Ag. Executive Secretary
9	IRC	Country Director
10	ILGS (Institute of Local Government Studies)	Lecturer/Research Fellow
11	GWCL	Director
12	Ledzokuku-Krowor Municipal Assembly	MCD
13	GWCL	Managing Director
14	MWRWH/ Water Directorate	Director
15	Ledzokuku-Krowor Municipal Assembly	MCE
16	NDPC	
17	EPA	Director
18	NDPC	
19	NDPC	
20	HSD	Director
21	EHSD	
22	TREND	
23	TREND	Project officer/Planner
24	AMA/ASIP	Project officer
25	Ledzokuku-Krowor Municipal Assembly	Planner
26	IRC	project officer/ communication officer
27	IRC	project officer
28	MWRWH/ Water Directorate	water and sanitation engineer
29	MWRWH/ Water Directorate	
30	SWITCH/KNUST	Assistant Facilitator
31	KNUST/SWITCH	Lecturer/ SWITCH Coordinator
32	SWITCH/KNUST	Facilitator

Appendix 3d: Example of Stakeholders attributes

SN	Gender	Age Group	Profession	Organisation	Role in Organisation
PURC3	Male	30-40	Civil Engineer	PURC	Assistant Technical Manager, Water
IRC1	Male	40-50	Engineer	IRC	IRC Country Rep?
WD6	Male	40-50	planner	WSMP	manager
WD7	Male	40-50	communicator	WSMP	Communication specialist
LG3	Male	40-50	environmental health officer	EHSD, MLGRD	Programme officer in charge of food, water, M&E
NG5	Male	40-50	Engineer	Pronet	Chief Executive
NG6	Male	30-40	social worker	WaterAid	Service Delivery and Policy Advocacy
NG7	Male	40-50	Community worker	read and write your future now	Programme coordinator
WD3	Male	below 30	water resources specialist	water directorate-MWRWH	officer in charge of water resources related issues
WD4	Male	below 30	Engineer	water directorate-MWRWH	planning and policy formulation
NG6	Male	30-40	social worker	WaterAid	Service Delivery and Policy Advocacy
PS2	Male	30-40	Civil Engineer	Rapha Consult	Director
WD8	Male	30-40	M&E	WSMP	Data Analyst
NG5	Male	40-50	Farming	RAWFEN	Programme officer

WRC1	Male	50-60	Economist	WRC	Regulation and management of water resources
WRC2	female	40-50	Water Quality specialist	WRC	provide technical inputs of water quality to WRC
KNUST 3	Male	30-40	Civil Engineer	KNUST/WAS HCost	Teaching and Research
GWCL	Male	30-40	Engineer	AVRL	Business Planning and Projects Development
NG8	Male	below 30	Civil Engineer	CHF International	Project officer

Appendix 3e: Sequence of Events in Accra LA

	Local/relating directly to LA	External (Mainly to SWITCH Project)	PhD work	External outside SWITCH
Jun-06	Initial Scoping	Start of Project		
Jan-07	Training on Setting up of LAs	1st SWITCH Scientific Meeting training on setting up of LA		
Feb-07	Initial Stakeholder engagement and follow up on scoping			
Mar-07	1st LA Meeting			
Apr-07	Training workshop on Natural Systems	Training on Social Inclusion		
May-07	Training on Urban Agriculture	creation of website		
Jun-07	Stakeholder visits for stakeholder analysis	SWITCH Reporting	Developing concept for PHD on learning alliances	
Jul-07	Stakeholder analysis interviews and reporting	Training in Process Documentation	Preparation for PHD Application and proposal initial proposal	
Aug-07	2nd LA Meeting Visioning	2nd Training on Social Inclusion		
Sep-07	2nd Training in Use of Natural Systems for Waste water treatment			
Oct-07		SWITCH Reporting		Participate in Launching of TPP
Nov-07	Urban Agriculture Training and selection of demo site			
Dec-07		LA Facilitators Training		
Jan-08		Planning and Budgeting, SWITCH Reporting, City Story		
Feb-08	Stakeholder Engagement	WASH Cost Rounds	Registration for PHD	Launching of National Water Policy

Mar-08				
Apr-08	Social Inclusion visits to selected communities	WEDC Conference		publish article on National water policy 1st April, Ghanaian times
May-08	3rd LA meeting; IUWM workshop on strategic planning			
Jun-08	Presentation on Learning Alliances to WASH Sector Stakeholders	Stakeholders engage in video conference with Zaragosa		
Jul-08	Presentation on Learning Alliances to WASH Sector Stakeholders (Mole)	Stakeholders engage in video conference with Zaragosa	Visit to UoG	
Aug-08		1st City Assessment of Birmingham	Visit to UoG	World Water Week
Sep-08			Visit to UoG	
Oct-08			Visit to UoG	
Nov-08		LA Facilitators Sharing Meeting		
Dec-08		SWITCH Scientific Meeting		
Jan-09		Planning and Budgeting, SWITCH Reporting, City Story		
Feb-09	Preparation and commencement of institutional mapping activities			
Mar-09	Initial Data Collection and Stakeholder Engagement on RIDA			World Water Forum
Apr-09	stakeholder engagement and data collection			
May-09				
Jun-09	4th LA Workshop, Presentation on RIDA			
Jul-09	Follow up for stakeholder Feedback on RIDA			Mole Conference

Aug-09	Follow up for stakeholder Feedback on RIDA			
Sep-09			visit to UoG	
Oct-09	Stakeholders from Accra Attend WITCH Scientific Meeting	SWITCH Scientific Meeting	visit to UoG	
Nov-09	5th LA meeting (strategic planning workshop)			
Dec-09		Meeting at World Bank to Present RIDA to water and sanitation specialist		
Jan-10	6th LA meeting (small working group on Strategic Planning and RIDA)	Follow up meeting with WB Water and Sanitation Specialist		
Feb-10				
Mar-10	Presentatio of RIDA at World Bank Workshop			Presentation of LA at AfWA congress in Kampala
Apr-10			Visit to UoG	
May-10		2nd Birmingham City Assessment	Visit to UoG	
Jun-10				
Jul-10		Write up for 2nd Birmingham City Assessment	Visit to UoG	
Aug-10		visits from external researchers		supporting with preparation for first Ghana water forum
Sep-10	Stakeholder engagement			Ghana Water Forum
Oct-10	stakeholder visits in preparation for Policy Forum	SWITCH Scientific Meeting		
Nov-10	Policy Forum			
Dec-10				
Jan-11				

Feb-11				
Mar-11				
Apr-11				
May-11				
Jun-11	End of Project	End of Project		
			Stakeholder interviews for PhD (June - December)	
			Write up of PHD/Transfer - 2012/2013	

Note: the activities provide the opportunities for notes and observation which forms part of data collection activities. Data and notes from these activities in addition to the interviews conducted during city assessment and other activities contributed to the data collected for the study.

Appendix 3f: Excerpts from Process Reflections Journal of Researcher

Notes from reflective diaries in 2007

Excerpt from January 2007

After the initial meetings with Esi and others, I had to travel to Cairo towards the end of January 2007 to attend the first training on facilitation and development of learning alliances which was organised by IRC in conjunction with CEDARE. This meeting took place in the last week of January, (see report folder Cairo in switch folder). I really enjoyed this first training and got to know the other learning alliance facilitators for other cities. I didn't know what to expect. But then it was a very revealing meeting (I came to understand better what the project was about and meaning of the learning alliance and the role that the learning alliance was to play within the project set up). We (myself and other identified LA participants) were introduced to LA concepts. Some of these had to do with adult learning; learning by doing, double loop learning and action research. The methods were very interesting different from what I was used to. The methods were very participatory – good sharing between participants. It inspired me what could be tried in Accra. My worry even at the time was the engagement of the stakeholders.

This excerpt from the reflection showed how I first got trained how to set up the LA process. It shows my own initial scepticism or worry at the beginning of whether the LA will be able to adequately engage stakeholders in the city of Accra. This was based on my experience where stakeholders have not played an active part in projects but yet in the LA we were expecting to work together with them to identify issues for

December 2007

By December I was quite tired. I had been virtually working the whole year without a break. I was not sure whether I would like to go ahead with the LA – at that time I felt SWITCH [LA] was just discussions with minimum action [at this time the results of the research and demonstrations were not yet ready].

Any way we had the 1st LA sharing workshop in Sogakope (IWMI was not able to attend because they had another meeting at the same time). In this meeting we had all the learning alliance facilitators coming in from the other cities to take part in this training. To share their experiences and stories about their learning alliances. I found the stories shared by PS (name anonymized) story on who's water is this very interesting; this later inspired an article I wrote on flooding. It also showed how different the formation of their learning alliance had been.

I still picked up a number of things. I liked PS's story – it was very significant. Their LA started around a question they all were struggling with and SWITCH came along. ... We started talking about micro-scenarios but I already did the scoring a few months ago. So I thought well okay, so I started looking for objectives for LA Accra. The scoring did help me as it reminded me of the things that I had to do.

People stuck with SWITCH because they are hoping that there will be implementation with SWITCH. Implementation is not happening (yet) so people have started to ask when is the demonstration starting? It all boils down to the focus that had to be decided before we started to meet.

This excerpt from my reflections also showed some continued doubt and still a sense of skepticism about how things will turn out. It however shows some significant events such as redefining objectives of the LA and a burgeoning understanding that it was important to begin to get the demonstrations going to increase interest of stakeholders.

Excerpt from 2010

This was the last year [the home stretch] and I felt I had to give my best shot to see how things will go and if we can end well after all “all is well that ends well”. Towards the end of the year the engagements with the WB had given indications that things could go very well. I was determined to pursue that angle. With the RIDA as my “weapon in hand” I think I made a lot of inroads. For example I attended the workshop on urban policy in Accra and I was able to join the group discussing climate change and got them to add IUWM to the policy strategies. It was quite easy to do this because those in my group were already people I was engaging in the LA so they immediately provided support for me and endorsed what I was saying

November 2010

“Policy forum finally took place. I was very happy with meeting (see notes and video + transcripts). I was happy for a number of reasons. The ministry of water resources works and housing helped to organise. They gave the venue free of charge. We only had to pay for the logistics which reduced the cost of the meeting for us drastically. This was good at a point when we did not have money. also we managed for the first time to get the managing director of the Ghana water company and the deputy managing director at our meeting. This had never happened. We really got very key people. We also got the director and there were very good discussions. At the end of the day they overwhelmingly pushed for Teshie to be used as a place for demonstrating IUWM and that we needed to prepare an IUWM plan together. So I asked myself why couldn’t this come at the beginning. For me this is what I needed to start with but looking back I think that the RIDA made all the difference by providing fodder by which we could base our discussions on. At this point we were discussing facts which could be substantiated and not just generic ideas or people thought”

This note was made after a major meeting where stakeholders had now become very supportive of the idea of IUWM and wanted to see more integrated demonstrations. It also showed the level that stakeholder engagement had reached. These notes were compared with interviews after the formal LA activities to provide an analysis on the progress of the process.

Appendix 4: Summary Description of RIDA and RIDA Protocol for Accra LA

RIDA stands for **R**esources, **I**nfastructure, **D**emand and **A**ccess. A summary of the framework is provided in the table below:

Resources	Infrastructure	Demand	Access
Refers to water resource in space & time	Refers to supply/treatment capacity	Refers to the entitlement/needs of users	Refers to actual use (
<p>Questions asked to address information about resources:</p> <p>How much water is – in space/time? What volumes are available? What is the quality? Who manages the water available? What rules (for example what permits are needed for extraction or how much can be extracted)? What (financial/human Resources)</p>	<p>Questions asked to address information on infrastructure:</p> <p>What infrastructure is available (for example capacity and type of treatment plant, lengths of distribution network etc)? What is its condition? What is its capacity (nominal & actual)? That is the value of Unaccounted for water? Who controls it (ownership and management)? What rules? What are the financial and human resources available?</p>	<p>Questions asked to address information on demand:</p> <p>Who are the users? What users? How many users? What demand? What are the existing institutions? What Legal framework defines entitlements and needs of users?</p>	<p>Questions asked to address information on access:</p> <p>What subgroups? Periods of scarcity (how often is water available)? Coping strategies (how do people deal with periods where there is no access. What is the alternative service available?) Barriers to access (e.g. land title or property ownership)?</p>

Information collection and analysis using a RIDA (Resources, Infrastructure, Demand, Access) framework to support the strategic planning process in Accra

Introduction

In May 2008, a Working Group was established to take on the development of a strategic plan for IUWM in Accra, to achieve the vision as defined by the Accra Learning Alliance, facilitated by the SWITCH project. Objective of the Working Group is to contribute to the formulation of an urban water management strategy based on the principles of IUWM.

The scope is expected to cover all aspects of IUWM relating to Accra including, water supply, sanitation, wastewater treatment and reuse and social inclusion. In order to ensure that the strategic plan is based on facts and realistic forecasts, a RIDA (Resources, Infrastructure, Demand and Access) analysis will be done to serve as input for the strategic planning process. Other inputs for the strategic planning process will be the social inclusion situational analysis and the institutional mapping, which are currently under development as well.

This protocol describes scope of the RIDA analysis, the needed data and information and the data and information collection process.

Objective of the RIDA analysis

Provide background information to the strategic planning Working Group, by collecting, structuring and analysing information on water resources, infrastructure, demand for water related services and the actual access to these services in Accra.

Unit and scope of analysis

Strictly speaking the city of Accra can be considered the area under the Accra Metropolitan Assembly. However, in the last decades, Accra has sprawled beyond these boundaries and can currently be considered to also cover part of the Ga West District Assembly, Ga East District Assembly and Tema Municipal Assembly. This area is commonly referred to as ATMA (Accra Tema Metropolitan Area) or

GAMA (Greater Accra Metropolitan area). The RIDA will focus as much as possible on the ATMA / GAMA area.

Although RIDA generally takes into account institutional issues as well, these will not be focused on in this analysis, as many institutional information will already be collected and analysed under the institutional mapping and social inclusion situational analysis.

Activities

- Collection of information on water resources, water supply infrastructure, sanitation infrastructure, draining infrastructure, demand for water related service and access of people to these services
 - o Online search on relevant information
 - o Analysis of information from the Accra starter kit
 - o Analysis of information from AVRL database
 - o Collection and analysis of other secondary information
- Analysis of the data from different sources and making it available in an excel sheet and / or GIS
- Write a brief descriptive report on the RIDA

Outputs

- Bibliography of the data and information sources
- Available compiled data in Excel and / or GIS
- Small descriptive report with special attention points for the strategic planning Working Group
- PowerPoint presentation to be presented to the Working Group

Appendix 5 Example of Letter from City Authority in Accra

ACCRA METROPOLITAN ASSEMBLY

ACCRA SEWERAGE IMPROVEMENT PROJECT



ACCRA METRO SEWERAGE UNIT
P. O. BOX MB 201
MINISTRIES - ACCRA

Our Ref.: ASIP/KNUST-CED/LQ/01
Tel. No.: 021 228791 & 234944
Fax:: 021-224989

4th August 2010

Professor Esi Awuah
Head of the Civil Engineering Department
Kwame Nkrumah University of Science & Technology
Kumasi

Dear Madam,

REQUEST FOR ASSISTANCE IN TERMS OF STUDIES AND DESIGN
TO PROVIDE SOLUTION TO THE 'LAVENDER HILL' NUISANCE IN ACCRA

As a follow-up to the discussions held between yourself and the office of the Mayor of Accra (in particular, Mr. Robert Ansah) on the above, I have been directed to liaise with you to discuss the technical issues, and to formerly request you to assist the Accra Metropolitan Assembly to provide a solution to the 'Lavender Hill' nuisance in Accra.

Accordingly, I shall fully avail myself to you on Tuesday 10th August 2010 to discuss all the technical requirements, after which Mr. Stephen Ackon, a former Graduate Student of yours, shall be on standby to attend to your needs during the design stage. Should the proposed date conflicts with your busy schedule, please do not hesitate to propose the date that will be convenient to you, and I shall ensure to be at your service.

Thanking you in advance for cooperation.

Yours sincerely,

MAJOR T.N.K. AWUAH (RTD)
Project Manager - ASIP

Copies

1. The Mayor of Accra
2. Mr. Robert Ansah, at the office of the Mayor

Appendix 6: Interview Guide for Stakeholders

General Interview Guide for Stakeholders

- Have you heard about the SWITCH project/Learning Alliance?
- How and why did you become involved in the SWITCH learning alliance in Accra/Birmingham?
- How many meetings have you been a part of?
- For you, what has been the most significant event/activity in the learning alliance? (why significant)
- Which of the demonstrations or activities undertaken by the learning alliance is likely to make the biggest improvement to integrated water management in this city?
- At the end of the project, what do you think it will have achieved in Accra/Birmingham?
- If the learning alliance process or SWITCH was to be repeated, what do you suggest it does differently next time?
- Which of the processes that SWITCH has initiated in the city are likely to continue beyond the end of the project – if any?
- Do you share SWITCH with your colleagues? If so, how do you explain SWITCH/Learning alliance to your colleagues?

Additional Follow up Questions for stakeholders depending on stakeholder group

- Do you consider yourself to be a member of the learning alliance?
- What is your Understanding of Learning/learning alliance based on your experience?
- What is your Motivation for Attending Learning Alliance meetings
- Looking at the learning alliance and how it was set up- any ways of improving?
- Any stakeholders who should have been part but were not there?
- What kinds of “new” knowledge have you acquired through the learning alliance, and how have you used this
- What actions/changes/effects might be expected to arise from a learning alliance over a 3-4-year period?
- What is your perception and understanding of IUWM in Accra? (with follow up questions)

- How do the various stakeholders perceive innovation, and what importance do they attach to technological innovation vis a vis “softer” institutional innovations?

Interview Guide for Researchers and Project Partners

- At the start of SWITCH, how did you expect your research to contribute to IUWM in Accra/Birmingham?
- As the project is ending, how have these expectations changed?
- Who do you expect to use your research results?
- What has been your experience with the learning alliance?
- What types of feedback have you had from city stakeholders on your research?
- If you were to do the same research again, what would you do differently, and why?
- How important is SWITCH amongst other projects and activities that you are involved in?
- What has been the extent of learning alliance influence? E.g. has the learning alliance been able to reach/ influence the national level?

Researchers external to City– (e.g. EU based researchers visiting Accra)

- How did you get involved in doing research in this city?
- What has been your experience with the learning alliance?
- What types of feedback have you had from stakeholders about your research?
- If you were to do the same research again, what would you do differently, and why?
- How has working with any other researchers and stakeholders influenced your research approaches?
- What is, after 5 years, the learning alliance?

Follow up Interview guide for Cost for participation and Motivation

Name.....

Organisation.....

1. What are the factors you think about if you have to decide to take part in a SWITCH Accra LA meeting?

.....

2. What is the cost to you of attending a meeting?

.....

3. Who pays for it?

.....

4. With reference to question 3, does this encourage you to attend or not?

.....

5. Why were you nominated from your organisation to attend LA meetings

.....

6. Do you think your involvement in the LA will impact/ improve on your work? If yes, how?

.....

7. What motivates you to be part of the LA?

.....

8. What do you do with the information from meetings

.....

9. Were you inspired to take up any action as part of the meetings (if yes, please detail briefly)

.....

10. What was the impact of your action? Was it followed up (by others)? If yes, how?

.....

11. How much influence do you think you have

a. on the process of the SWITCH Learning Alliance

.....

b. within your institution

.....

Appendix 7: List of SWITCH Project Partners

SWITCH Partner Institution	Country
UNESCO-IHE Institute for Water Education	Netherlands
IRC International Water and Sanitation Centre	Netherlands
ETC International Group	Netherlands
Wageningen University and Research Center	Netherlands
Middlesex University	UK
University of Birmingham	UK
Ove Arup and Partners	UK
University of Greenwich – NRI	UK
Loughborough University	UK
University of Abertay Dundee	UK
Mekorot Israel National Water Co.	Israel
Hebrew University of Jerusalem	Israel
Chongqing University	China P.R.
Chinese Academy of Sciences	China P.R.
Municipality of Zaragoza	Spain
University of Lodz	Poland
International Water Management Institute (IWMI)	Ghana
Kwame Nkrumah University of Science and Technology (KNUST)	Ghana
Ghana Municipality of Belo Horizonte	Brazil
Universidade Federal de Minas Gerais	Brazil
Federal Institute of Technology Lausanne	Switzerland
National Technical University of Athens	Greece
Universidad del Valle	Colombia
Universidad Nacional de Colombia	Colombia
IPES - Promocion del Desarrollo Sostenible	Peru
Ingenieurgesellschaft Prof. Dr. Sieker	Germany
Hamburg State Ministry	Germany
Technische Universität Hamburg	Germany
Technische Universität Berlin	Germany
ICLEI - European Secretariat	Germany
House of Water and Environment	Palestine
Centre for Env & Dev for the Arab Region & EU	Egypt

Appendix 8 SWITCH Themes and Sub-themes

The SWITCH project had 6 thematic areas which were further divided into sub-themes referred to in the project as workpackages. Reference to SWITCH Themes is made in Chapters 4 (section)

Theme	Workpackage (sub-theme)	Description of themes and sub-themes (review SWITCH DoW)
1. Urban Water Paradigm Shift	<p>1.1 Development of a strategic approach and of indicators for sustainability and risk assessment.</p> <p>1.2 Modelling of urban water systems and the development of a decision support system.</p> <p>1.3 Integration of existing infrastructure.</p> <p>1.4 Strategic planning, implementation and performance assessment.</p>	<p>This theme sought to address the challenge of conventional (old and ineffective 19th century) concepts for water management which have become inadequate to deal with the current state of urban water management (see sections 1.3 and 2.2 in main thesis). The theme was to identify more innovative and effective ways of managing urban water.</p>
2. Storm Water Management	<p>2.1 Technological options for storm water control under conditions of uncertainty.</p> <p>2.2 Decision-making processes for effective urban stormwater management.</p> <p>2.3 Environmental change studies for stormwater control and reuse options</p>	<p>This theme sought to address the challenges with too much water (flooding) or too little water (droughts) and how cities might cope with these occurrences.</p>
3. Efficient Water Supply & Use	<p>3.1 Demand management for optimization of urban water services.</p> <p>3.2 Safe water reuse.</p> <p>3.3 Urban water supply and use - other productive reuses.</p>	<p>This theme sought to address the challenges affecting water supply in terms by particularly paying attention to issues of inequity and disparity as well as developing mechanisms for more efficient use of water given the context of rapid urbanisation and the increased pressure and demand for water.</p>

Theme	Workpackage (sub-theme)	Description of themes and sub-themes (review SWITCH DoW)
4. Waste Water	<p>4.1 Eco-sanitation and decentralised waste water management in an urban context.</p> <p>4.2 Management of industrial emissions.</p>	<p>This theme looked at the challenges of low coverage of improved sanitation and waste water services and the effective on public health and the environment. The research identified options for improving access to sanitation</p>
5. Urban Water Planning	<p>5.1 Urban Waterscapes - Planning and development in urban transformation processes.</p> <p>5.2 Use of urban water (fresh and wastewater) for urban agriculture and other livelihood opportunities.</p> <p>5.3 Maximising the use of natural systems in all aspects of the municipal water cycle</p>	<p>This theme addressed the challenge of waste water treatment and explored the potential of natural systems as a means of effective and low cost treatment for waste water. And the contribution of natural systems in urban water management as as whole</p>
6. Governance & Institutions	<p>6.1 Governance for Integrated Urban Water Management</p> <p>6.2 Learning alliances (LA)</p> <p>6.3 Optimising Social Inclusion (SI)</p> <p>6.4 Financing, Cost Recovery and Institutional Models</p>	<p>This theme sought to address challenges with poor water governance and fragmented institutions as well as identifying innovative financing for urban water management.</p>