CABI

ONE HEALTH CASES

Towards Institutionalization of One Health in Eastern and Southern Africa

Capacitating One Health in Eastern and Southern Africa is a 4-year project which aims to enhance the institutionalization and operationalization of One Health across 12 countries through themes of research and innovation, governance, education, and implementation. Projects are led and adapted within local contexts in each of the respective countries.

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Abstract

The integration of One Health (OH) approaches, principles, and ethos within international organizations and public sectors' national health and environmental structures is a long process that requires both

institutionalization and operationalization. Within the framework of a development project covering 12 countries in Eastern and Southern Africa, an innovative process to institutionalize OH approaches and principles at the national level is presented. Supported by international research and technical organizations, national higher education institutions were empowered to assist relevant ministries and stakeholders in their roadmap towards the integration of OH approaches and principles. A rapid OH assessment tool was designed to understand the existing OH stakeholders, governance structures, and gaps in the implementation of OH in each country. This provided evidence for developing plans for furthering the country's goals towards institutionalizing OH and was implemented through a stakeholder, demand-driven process. After close to 2 years of implementation, five key insights for OH institutionalization developed: (1) utilizing higher education 'multiplier' institutions for intersectoral cohesion and action; (2) emphasizing participatory design driven by demand; (3) having a flexible project framework to ensure national needs are met with timing adapted to local administrative and political rhythms; (4) promoting cross-country learning opportunities that offer peer-to-peer buy-in, trust; and (5) the need for soft skills training in OH for better intersectoral collaboration.

What is the Incremental Value that Makes this a One Health Case?

Capacitating One Health in Eastern and Southern Africa (COHESA) is a project that aims to enhance the adoption of One Health (OH) across interdisciplinary teams in 12 African countries through the facilitation and support of academic interdisciplinary teams. Within countries, OH stakeholders and the broader public benefit from cohesive approaches to OH awareness, understanding, governance, education, and implementation. This greater understanding of OH covers animal, human, and environmental sectors, and the governance aspects help to ensure all aspects of OH are equitably considered when drafting national approaches to OH challenges. Integration of stakeholders from all OH sectors within countries should ensure enhanced sustainability in OH undertakings in the long term. Top-down frameworks are necessary to guide national OH agendas but should provide a space for OH stakeholders to integrate and adapt to the OH framework and concept in their own national context to ensure better appropriation. This process provides an opportunity for countries to consult, co-create/co-design, collaborate, and learn from each other to implement current and future OH agendas.

The incremental value of OH within this case includes: (1) engagement of broad OH stakeholders across disciplines and sectors from an early stage; (2) rapid evaluation of the baseline situation in OH within countries and development of country plans for OH that aligned with international, regional, and local OH policies, frameworks, activities, and other OH projects to ensure relevance, avoid duplication, and maximize outcomes; and (3) utilization of higher education institutions (HEIs) as 'multipliers' to implement the project with support from relevant stakeholders and utilize their broad network across OH sectors and disciplines to support OH from a well-respected position. All these aspects work towards OH stakeholders institutionalizing and then operationalizing an OH approach that will directly impact human, animal, and environmental health.

Learning Outcomes

1. Evaluate the involvement of HEIs as key drivers of OH institutionalization and operationalization at a national level.
2. Understand the benefits of wide stakeholder engagement and baseline understanding of OH when planning national OH projects.
3. Evaluate the benefits of building on existing OH initiatives to avoid duplication and over-burdening OH stakeholders.
4. Characterize the variety of actors and stakeholders needed to implement a multi-national OH project.

Background and Context

The One Health High-Level Expert Panel (OHHLEP) recently proposed a new definition of OH – as an 'integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals,

and ecosystems,' – which takes the OH concept forward into policies and concrete actions and strengthens aspects that were somewhat neglected (OHHLEP *et al*., 2021; Adisasmito *et al*., 2022). This includes the integration of the concepts of healthy environments and the interdependent links between global crises, ecosystem health, and the health of human and non-human animals (de Garine-Wichatitsky *et al*., 2020; Keune *et al*., 2021). This expanded definition is needed to move beyond the early focus on veterinary public health and food safety, antimicrobial resistance, and zoonoses to address other global priorities that require an OH approach.

The OH concept benefits from strong leadership by international organizations, especially the World Organisation for Animal Health (WOAH, formerly OIE), the World Health Organization (WHO), the United Nations Food and Agriculture Organization (FAO), and the United Nations Environment Programme (UNEP), which created the quadripartite for OH. The quadripartite sets an example of the interdisciplinary and cross-sectoral approach needed to implement OH through the development of the OH Joint Plan of Action (JPA), which provides a framework for these four key international actors to support the implementation of OH (FAO *et al*., 2022). However, to be successful, this approach must be implemented at the national and subnational levels, with institutionalization across all levels of society. Therefore, the OH approach cannot be institutionalized and operationalized simply through a top-down approach guided by international organizations but needs to be adapted in different national contexts to meet the challenges and expectations of varied health systems, stakeholders, and beneficiaries.

Over the past decade, many donor-supported development projects have focused on the implementation of OH approaches in LMICs (Kelly *et al*., 2020; Osman *et al*., 2023). While there is no detailed study on the approach and impact of these development projects, competing objectives can be identified between the agendas of donors and recipient countries. For example, in Africa, there are known hotspots for the emergence of new diseases with epidemic or pandemic potential (Jones *et al*., 2008). External donors tend to promote actions aimed at protecting global health security by identifying, detecting, and if possible, controlling the emergence of diseases in SSA before they threaten the world (Alimi and Wabacha, 2023; Mwatondo *et al*., 2023). However, for SSA, the burden of endemic diseases in humans (e.g., tuberculosis and malaria) and livestock (e.g., tick and tsetse-borne diseases) remains dominant, and an OH approach should be adapted to these challenges instead of solely targeting emerging infectious diseases. Both approaches are necessary; however, in the resource-limited environment of LMICs, OH agendas must be locally relevant for adoption and sustainability.

Based on the design and implementation of an OH project in the regions of Eastern and Southern Africa (ESA), we share the main experiences and lessons learned during 2 years of structuring the project's activities in partnerships, focusing on the institutionalization of OH by working with and through HEIs to enable stakeholders to facilitate this process. We hope to guide others in navigating the complex ecosystem of OH stakeholders, such as donors, implementing agencies, and national stakeholders.

Transdisciplinary Process

Project design

The design of COHESA was conceived in a 5-day hybrid online-in-person workshop with stakeholders from across ESA. Countries and stakeholders were identified through existing networks of the International Livestock Research Institute (ILRI) and the International Agricultural Research Centre for Development (CIRAD). This was followed by a scoping review of the problems to be addressed and development of a standard proposal. Based on the outputs of this workshop, the 4-year project aims to improve OH governance, education, and delivery across 12 countries in ESA. COHESA is led through a consortium comprising the ILRI, CIRAD, and International Service for the Acquisition of Agri-biotech Applications (ISAAA AfriCentre), of which ILRI initiates and drives the overall project on behalf of the donor (EU OACPS ACP-IF – see acknowledgements).

There were pre-existing collaborations between consortium members (at the institutional level, but not at the individual level for COHESA team members) and between the ILRI and ISAAA. Each partner has different expertise and history of working in specific countries. Given this, it was decided that ILRI would support implementation in six Eastern African countries plus Malawi, while CIRAD would support implementation in five Southern African countries. ISAAA has a more technical role in the project linked to a work package

(WP) on governance (see below) and works across all 12 countries. The consortium collaborates with development partners (WOAH, FAO, WHO, CDC Africa, African Union, World Bank) and other relevant entities who are active in OH across ESA to ensure consistency in approach and avoid duplication.

Within each country, the project is implemented by a local multiplier (i.e., partner) (Table 1), which is typically the most preeminent national HEI in the country. Each country has a consortium country coordinator (i.e., a consortium staff member) who has knowledge of the OH situation in the country(ies) they support, is often country-based, has good relations with, and may be hosted by the local multiplier. Coordination of activities across all countries is provided by the consortium and the WP leads (Fig. 1).

Multiplier HEIs include multiple faculties and involve external stakeholders (see Table 1 and Fig. 2). Initially, there were 11 multipliers working on the project, although Amoud University was added in 2023 to support activities around understanding the OH situation in Somalia and Somaliland. These institutes were selected based on their prior OH research and/or educational initiatives as well as pre-existing working relationships with consortium members. The level of implementation in each country varied (Fig. 2) based on prior working relationships with multipliers and locations where ILRI and/or CIRAD have offices. The University of Pretoria in South Africa is a strategic partner that assists in implementing the project in the Southern African region as well as providing inputs to various work packages.

Project structure

To achieve the objectives of COHESA, four WPs were developed (Fig. 1). The first WP aims to understand the current OH situation in each COHESA country. This was achieved through a baseline assessment including a desktop review, key informant interviews, and a focus group discussion among OH experts. The main component of the evaluation tool was to understand the national OH landscape (in terms of stakeholders, institutions, and ongoing projects). Please see individual country case studies in this series for more details on the methods for the baseline OH assessment. COHESA aims to avoid duplication of existing OH activities and to build upon existing work to maximize OH outcomes; therefore, the baseline provided a context analysis in each participating country. The baseline also helped measure the status of OH at the onset of COHESA and have a comparator for when the endline assessment is performed upon project completion. In addition, to understand the stakeholders contributing to OH platforms, net-mapping workshops were used in-country (Eva Schiffer and International Food Policy Research Institute, 2007). Net mapping helps to identify influences on decisions and identifies conflicting goals through visualization of interests and influences (Eva Schiffer and International Food Policy Research Institute, 2007). In this case, the countries evaluate who influences the institutionalization of national OH platforms (or variations on the same).

OH governance and the promotion of national and regional OH collaboration are targeted in the second WP. This is a major component of OH institutionalization across all countries, in which government entities are supported towards this goal. The objective is to better facilitate OH institutionalization by developing or improving their OH platform (i.e., the entity responsible for OH within the country). This is achieved by engaging and facilitating OH stakeholders both within and outside the government to institutionalize OH with relevant policies, agreements, and funding.

Sustainability is a key consideration for OH and is partially ensured by a third WP aimed at building the future OH workforce. A variety of methods are being utilized to achieve this aim within HEI, including benchmarking OH curricula at the master's level, developing and improving OH curricula, mentoring and supporting researchers in the OH field, and training OH educators. Outside HEIs, there is also a need to support OH professional development for those already in practice and to work with primary and secondary schools to integrate OH into their curricula. To facilitate activities within the HEI space, a survey tool was developed to better understand the current offerings of OH in HEI in the ESA region and the competencies needed in OH. This was implemented via an online survey of OH experts from academia, and the results were fed into the benchmarking process. This entire process was informed by the existing work on core competencies in OH (Togami et al., 2018, 2023; Rocheleau et al., 2022; Laing et al., 2023) while ensuring that the competencies were suitable for the ESA context.

The fourth WP tests the functionality of the institutionalized OH approach to deliver OH solutions, that is, providing an exercise for OH operationalization. A focal topic will be selected by the multipliers, OH platform (or equivalent), and OH team within the respective countries. This focal topic can be from any aspect of OH in terms of sectors as well as the stage of implementation. However, it has been emphasized that countries select a topic that already has a level of expertise to draw from internally. This topic will be the focus of initiating or supporting improved OH implementation and should include private-public partnerships to strengthen delivery.

Table 1. Multipliers (country partners) and their supporting teams to enable One Health institutionalization within their respective countries.

| Country | Multiplier | Participating stakeholders | | | |
	Higher Education Institution (HEI)	Primary faculties supporting COHESA implementation	Secondary faculties supporting COHESA implementation	Other HEI/research institutes supporting project implementation	Other partners supporting project implementation
Botswana	Botswana University of Agriculture and Natural Resources	Department of Crop and Soil Sciences; Department of Biometry and Mathematics; Department of Veterinary Sciences; Department of Education and Extension	Department of Food Science and Technology; Department of Land and Atmospheric Resources	University of Botswana; Botswana International University of Science and Technology	Ministry of Health; Botswana Public Health Institute; Ministry of Environment and Tourism; Ministry of Land and Water Affairs; Ministry of Education and Skills Development; Ministry of Agriculture
Ethiopia	Addis Ababa University	School of Public Health	N/A	Jimma University; Mekelle University; Haromaya University; Bule Hora University; Ethiopia Public Health Institute (EPHI)	National One Health Steering Committee (NOHSC); World Health Organization (WHO); Africa One Health University Network (AFROHUN); Johns Hopkins Center for Communication Programs (JHU-CCP); Ethiopian Veterinary Professional Association; Ethiopian Environmental Health Professionals Association; Ethiopian Public Health Association; Ethiopian Medical Association
Kenya	University of Nairobi	Department of Anthropology, Gender and African Studies; Department of Public Health, Pharmacology and Toxicology	Department of Clinical Studies; Department of Plant Science and Crop Protection; Department of Medical Microbiology and Immunology; Department of Food Science and Technology; Department of Biology	N/A	Zoonotic Disease Unit
Malawi	Lilongwe University of Natural Resources	Faculty of Veterinary Medicine	Faculty of Agriculture	Malawi University of Science and Technology; Kamuzu University of Health Sciences	Lilongwe Wildlife Trust; Department of Animal Health and Livestock Development; Public Health Institute of Malawi
Mozambique	Universidade Eduardo Mondlane	Centro de Biotecnologia Faculdade de Veterinaria Faculdade de Medicina	N/A	N/A	Instituto National de Saude

Country	Multiplier	Participating stakeholders			
	Higher Education Institution (HEI)	Primary faculties supporting COHESA implementation	Secondary faculties supporting COHESA implementation	Other HEI/research institutes supporting project implementation	Other partners supporting project implementation
Namibia	University of Namibia	Faculty of Agriculture, Engineering and Natural Resources; Faculty of Health Sciences and Veterinary Medicine	N/A	Faculty of Health and Applied Sciences, Namibia University of Science and Technology (NUST)	Ministry of Health and Social Services, Ministry of Agriculture, Water and Land Reform; Ministry of Environment and Tourism
Rwanda	University of Global Health Equity	Center for One Health		Rwanda Institute for Conservation Agriculture; University of Rwanda	Rwanda Biomedical Council (RBC); Rwanda Agriculture and Animal Resources Development Board (RAB); Ministry of Agriculture and Animal Resources; Rwanda Environment Management Authority
Somalia	Amoud University	Research and Community Services	College of Health Sciences	Somali National University	One Health Technical Working Group; Ministry of Health Somalia
Tanzania	Nelson Mandela Institute of Science and Technology	School of Life Sciences and Bioengineering Global Health and Biomedical Sciences	N/A	Sokoine University of Agriculture (SUA); Kilimanjaro Christian Medical College (KCMC); Muhimbili University of Health and Allied Sciences (MUHAS); Tanzania Livestock, Research Institute (TALIRI); Kilimanjaro Christian Research Institute (KCRI)	One Health Section Prime Ministers' Office; AFROHURN; One Health Society; Roll back Antimicrobial Resistance (RAMR)
Uganda	Makerere University	College of Veterinary Animal Resources and Biosecurity (COVAB)	Department of Biosecurity, Ecosystems, and Veterinary Public Health (BEP)	College of Humanities and Social Sciences, Makerere University; School of Public Health Makerere University; School of Agriculture Kyambogo University	Uganda National One Health Platform (UNOHP)

Continued

Table 1. Continued.

| Country | Multiplier | Participating stakeholders | | | |
	Higher Education Institution (HEI)	Primary faculties supporting COHESA implementation	Secondary faculties supporting COHESA implementation	Other HEI/research institutes supporting project implementation	Other partners supporting project implementation
Zambia	University of Zambia	Department of Disease Control	Levy Mwanawasa Medical University; Lusaka Apex Medical University; University of Lusaka (UNILUS) – Public Health; University of Zambia (UNZA) – School of Public Health	Tropical Disease Research Center (TDRC)	Zambia National Public Health Institute
Zimbabwe	University of Zimbabwe	Faculty of Veterinary Sciences; Faculty of Medicine and Health Sciences; Faculty of Agriculture, Environment and Food Systems	Faculty of Education, University of Zimbabwe	N/A	Department of Veterinary Services; Ministry of Environment, Water and Climate; Environmental Management Agency; AMR OH secretariat; Ministry of Health and Child Care
South Africa[1]	University of Pretoria	Faculties of: Natural and Agricultural Sciences; Veterinary Sciences; Health Sciences	Faculty of Education (Comprehensive Online Education Services, COES)	N/A	N/A

[1]South Africa is not a beneficiary country, but the University of Pretoria is a partner organization which supports the implementation of COHESA in Southern Africa.
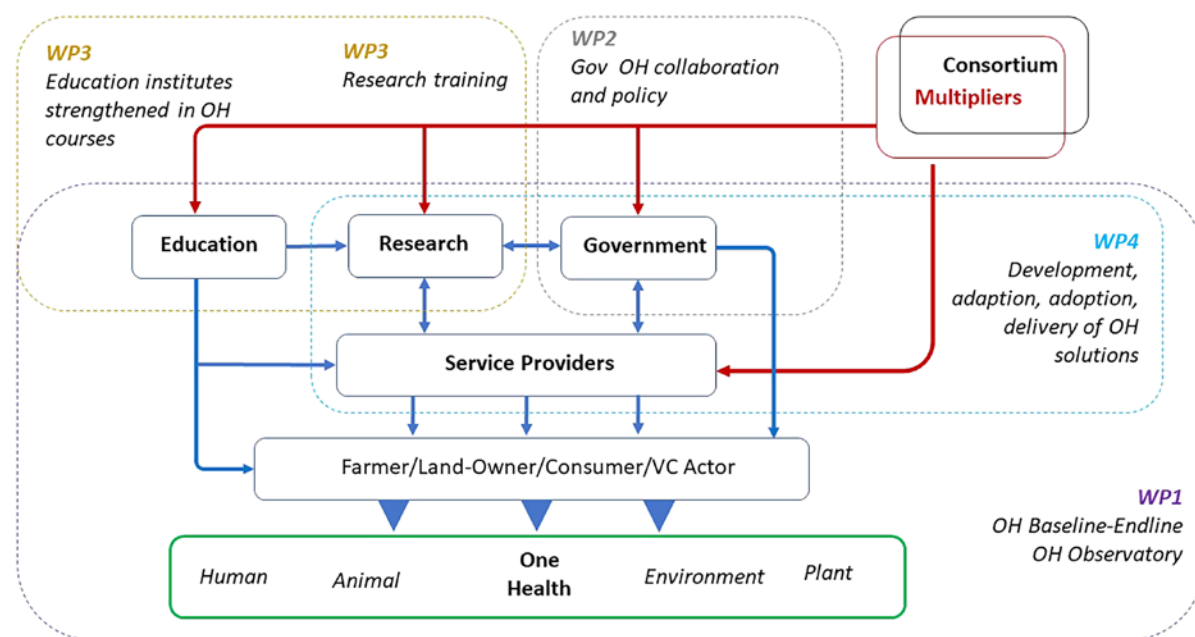N/A = not applicable; HEI = higher education institution.

Fig. 1. Implementation of work packages of COHESA (Capacitating One Health in Eastern and Southern Africa) by the consortium (ILRI, CIRAD, and ISAAA) and the multipliers (country partners). Acronyms: OH: One Health; WP1: Work Package One; WP2: Work Package Two; WP3: Work Package Three; WP4: Work Package Four; and VC: value chain.

Project Impact

The project was launched in December 2021 and will run as a 4-year project (Desta and Knight-Jones, 2022). We synthesize the results to date in the context of the consortium and multipliers having adapted to the project objectives and to what extent the flexibility allowed by the donors and project structure was used to match the project objectives to the local context in each of the 12 countries.

Project team members are mainly comprised of the multipliers' institutional staff across departments to cover different OH sectors (Table 1). In some countries such as Zambia, the team also includes key government OH actors from the National Public Health Institute. In Botswana and Namibia, teams include other academic institutes because the multipliers cover only two aspects of the OH triad. In Ethiopia, the National One Health Steering Committee (NOHSC), multiple HEIs in the region, and the Ministry of Education were involved in charting the way forward within the framework of the project. Efforts were made to establish an OH think tank to generate evidence and offer policy guidance on OH governance as well as integration of OH in research, education, and development programs. In cases where teams are mainly comprised of the multiplier institute, they still work to ensure stakeholder engagement with other sectors and institutes. For example, in Kenya, the multiplier has a team member on OHHLEP, and the team maintains close links with other academic and government institutes involved in OH. The relationship between consortium staff, country members, and other OH stakeholders was made smoother when consortium institutions already had ongoing projects with multiplier institutions (n = 10), as opposed to creating a new collaboration with the institutions (n = 2).

The composition of multiplier teams varies across countries, but they function in a similar manner. They mostly meet virtually, except when the country coordinator is based in-country (n = 6). Some countries assign individuals to specific WPs, while others work as joint teams to accomplish tasks. Each country has an online activity plan (template provided by the consortium) to plan its country's activities and tailor their plans as needed. Multipliers can add activities or change scheduled activities according to the development of the OH initiatives in the country or the work plan of the OH platform when it exists. They can consider other OH projects funded by other donors to ensure that any activity in the country makes sense according to the OH strategic plan and not only according to the project's logical framework.

In the theme of project flexibility, Somalia was added to the COHESA project halfway through the project timeline. Somalia has participated in limited OH initiatives and capacity building over the past two decades, and through ongoing working relationships with colleagues in Amoud University, it was determined that COHESA could provide a platform to enhance and build upon the past OH work. The team in Somalia has the added the benefit of learning from the other country teams to jump-start their entry into the project.

COHESA Countries
- Deep Dive
- Standard
- Focussed
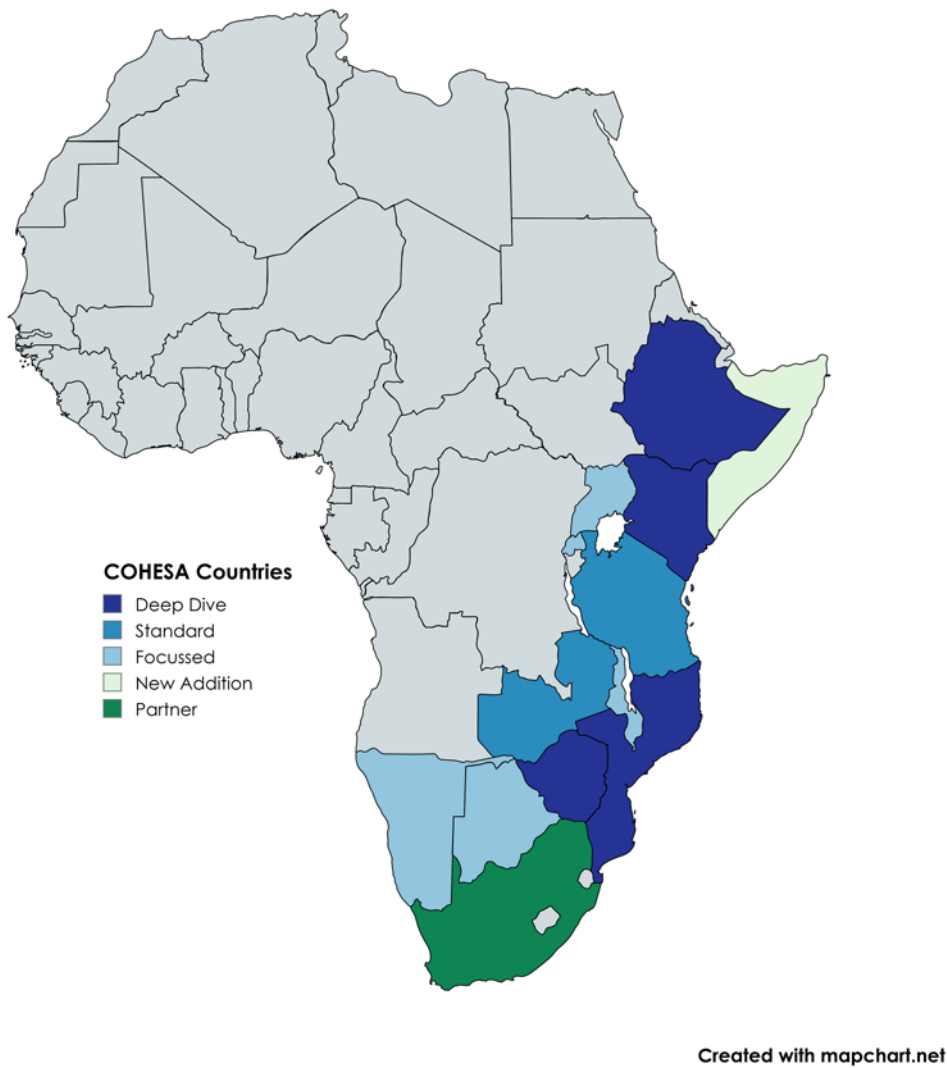- New Addition
- Partner

Created with mapchart.net

Fig. 2. Capacitating One Health in Eastern and Southern Africa (COHESA) country implementation structure, deep dive which has the highest level of implementation, followed by standard countries with moderate implementation, focused which has light implementation, a new addition to the project in year 2 with baseline implementation, and partner country of South Africa which assists with implementation across the Southern African region.

The COHESA consortium developed baseline tools and provided training to multipliers to use the tools in a consistent manner across the ESA region. Each baseline report was validated during a half-day workshop attended by a broader OH stakeholder group (i.e., all relevant national OH stakeholders), and an OH country plan or activity roadmap was designed considering other concurrent OH activities happening within the country. Alongside the baseline, net mapping was initially completed in four countries. This process adds to the baseline knowledge of OH stakeholders, their levels of influence on a specific goal, their priorities towards the goal, and current interactions (e.g., collaboration, communication, funding) among the identified stakeholders that are relevant in responding to the goal and status of national OH platforms when they exist.

During the first year of the project, inter-country activities were set up both virtually and in person to strengthen the multiplier and consortium network. Five workshops were organized for all COHESA country multipliers. The first one in Kenya proposed a series of training events to equip COHESA multipliers and OH stakeholders with effective communication and policy advocacy skills that can enable them to effectively communicate OH issues and solutions from research findings to non-technical audiences, including media and policy makers. In addition, participants were trained to enhance their project management and leadership skills, as well as experiential learning, on a model OH platform. The second workshop, in Botswana, aimed to facilitate planning activities to build the future OH workforce (Yussuf *et al*., 2022). This workshop provided opportunities for regional collaboration and strengthened existing OH education and training capacities in the ESA region. In addition, webinars (n=2) were organized on OH topics, with interventions by members of the consortium and/or multipliers and open discussions on the theme.

The third workshop held in South Africa aimed to facilitate capacitating the future OH workforce through awareness of available OH education resources and planning for their utilization within country plans for education initiatives. The fourth meeting was a biennial conference to review progress and share insights and innovations to consider when implementing the project during the final 2-years (Ballantyne *et al*., 2023). The fifth workshop held in Zimbabwe was focused on greater integration of the environment and ecosystem health into the OH approach within ESA (Ballantyne *et al*., 2024).

In addition to COHESA-wide workshops, there have been two regional workshops: one in Rwanda for East Africa and one in Zambia for Southern Africa. In these workshops, a train-the-trainer event was held to facilitate net mapping in the seven countries that had yet to implement this activity. Originally, net mapping of OH stakeholders was only planned in four countries (Ethiopia, Kenya, Mozambique, and Zimbabwe); however, due to the unique outputs and benefits indicated by countries having completed the process, the remaining countries requested for the exercise to occur. An additional five countries (Malawi, Namibia, Rwanda, Tanzania, and Uganda) completed their net mapping by September 2023, with the remainder to be completed by early 2024. Ethiopia has conducted an additional net mapping activity beyond the original one to examine the institutionalization of OH in research and education at secondary and tertiary levels. The results from this exercise helped to establish a technical working group dedicated to the integration of OH into HEI and secondary schools.

COHESA aims to build upon existing OH activities, and within the onset of the project, a few notable achievements have been made. In Zambia, the National One Health Bridging workshop was supported by the UK Health Security Agency (UKHSA), FAO, and WHO. In Mozambique and Zambia, COHESA supported the consolidation and validation of its respective OH Strategic Plans. Similar work is planned in Malawi, Botswana, and Namibia, and notably, colleagues from Zambia have attended workshops in Malawi to share their experiences and inputs. In Botswana, the multiplier accompanied the review of the Botswana Libreville Declaration Situational Analysis and Needs Assessment Report (last conducted in 2013). These activities lay the foundation for activities related to OH operationalization that will start in the second phase of the project. Furthermore, in Zambia, COHESA has forged stronger strategic OH partnerships with other local and international OH agencies. With support from the COHESA consortium, Zambia has been actively involved in the co-application of OH projects, such as Nature for Health (N4H, UNEP programme) and the Pandemic Fund, both of which have been awarded.

To support the future OH workforce, the Inter-University Council of East Africa (IUCEA) in collaboration with ILRI has produced benchmarks for a Masters in OH through COHESA support. The IUCEA is responsible for harmonizing and ensuring quality higher education in the East African Community (EAC). As part of this mandate, the IUCEA has developed a series of curriculum benchmarks for different degrees. These benchmarks ensure that degree holders across the EAC have attained an agreed level of competency and promote the mobility of graduates and academics. In this instance, they drew OH experts across the ESA region into a technical working group to develop a new set of benchmarks. A broader set of perspectives can ensure that the benchmarks are useful in ESA as opposed to just the EAC, as the IUCEA makes their benchmarks publicly available for any HEI.

In Southern Africa, a semi-equivalent body to the IUCEA exists: the Southern African Regional University Association (SARUA), working for the Southern African Development Community (SADC). It was created much more recently (in 2007; 46 member universities in 16 countries) compared to the IUCEA (created in 1980; 133 member universities in seven countries). SARUA was invited to the benchmark workshops to start brainstorming around the OH themes and reflect on the benchmarking process used by IUCEA. The University of Pretoria will lead the benchmarking process in Southern Africa and engage relevant stakeholders in SADC. Alongside the benchmarking process, a HEI survey was implemented across all 12 COHESA countries and has also been implemented in the EAC with the addition of South Sudan, the Democratic Republic of Congo, and Burundi. The results of this survey helped inform the benchmarking process and future activities targeted at OH training.

The FAO regional office in Gaborone and later in Kenya requested expertise for OH regional training in both the SADC and EAC regions. ILRI, CIRAD, and multiplier staff contributed as experts on behalf of COHESA to these 4-week training gatherings of between 50 and 100 participants from the regions. Support has also been provided to the HORN research network for Kenya, Ethiopia, and Somalia and has paved the way for increasing engagement in Somalia (not originally included in the COHESA project). In Zambia, the multiplier was called upon by FAO to be the lead trainer of the FAO-OH Virtual Learning Center for Zambia, with the COHESA OH expert being the co-lead trainer. A total of 380 OH actors across the public health, animal health, environment, tourism, social science sectors completed the course, out of over 700 participants enrolled in the FAO-online OH course in Zambia.

Project Outlook/Conclusions

Given the recognized role of an OH approach and principles to tackle complex health, there is a need for OH institutionalization and operationalization. Here, we describe the experience of an intervention involving international and national HEIs engaging in-country OH stakeholders to support and/or develop their own definition of an OH framework in their specific context. It is noteworthy that this project works directly with people to improve OH governance and enhance capacity in the OH workforce. So, while working with the 'human' aspect of OH, these individuals all work across the human, animal, environmental, and broader OH sectors and therefore impact all aspects of OH. The 12 countries involved in the project have opportunities to improve institutionalization of OH, integrate OH approaches and principles into research and education activities, and model innovative OH solutions. Our main recommendations to date are as follows:

i) The role of HEIs in the OH institutionalization process remains critical. HEIs have trained and train all current and future OH professionals and replicate internally the interdisciplinarity that should translate to intersectoral collaboration in the professional domain. They are close to neutral in the network of OH stakeholders, which facilitates trust within the network, and can support national OH initiatives.

ii) The design of externally funded OH projects should be as participatory and demand-driven as much as possible to leave the OH 'steering wheel' to national stakeholders who have already engaged in OH through other projects and will continue after the project. National OH stakeholders also have the best understanding of the past and current national OH intervention landscape, who is currently doing what and are aware of the optimal contributions to the national OH roadmap. This also ensures that the OH framework is adapted to the national context and not only imposed from the outside.

iii) To be participatory and demand-driven, the intervention logical framework should be as flexible as possible to adapt to the changing local context (e.g., include other new projects with overlap), emerging needs and opportunities, and deleting and adding activities as requested.

iv) Promoting, as much as possible, cross-country interaction and collaboration for countries at different stages in their OH pathway to share their experiences with others (e.g., sharing documents and network design), avoiding pitfalls, and taking acceptable shortcuts. This ensures better appropriation of the OH concept through peer-to-peer learning and experience sharing.

v) In our experience, most demand by national stakeholders in terms of OH training focuses on soft skills training related to advocacy, communication, negotiation, facilitation, and leadership to improve intersectoral collaboration, the relationship with decision makers, and raising OH awareness within civil society.

The implementation of a broadly scoping OH project by a network of international and national entities with a mandate for applied research provides a suitable entry point for OH stakeholder networks. HEIs often have a history of collaboration across countries, are involved in international research projects, and are nationally connected to governmental services and other public or private organizations because of their mandate to train the technical elite in OH-related domains. However, this advantageous position in the OH network can vary from country to country, especially if individual researchers are not from core biomedical domains. Researchers need to be capacitated in soft skills to learn how to navigate the complexity of OH networks and determine their role in pushing forward the OH agenda. This sentiment is reflected in a recent review by Laing *et al*., 2023, and the IUCEA technical working group, where both have emphasized the need for skills that are cross-cutting across all technical sectors (e.g., collaboration, communication, values, attitudes, etc.).

While COHESA was designed in 2021, the plans and implementation have aligned with the recent OH JPA by the quadripartite (Table 2), the OH Theory of Change (TOC) by OHHLEP (Table 2), the definition of OH implementation described by (Nzietchueng *et al*., 2023), and the recommendations from a recent review on global OH networks by (Mwatondo *et al*., 2023). Our intervention is well aligned with two recommendations from Mwatondo *et al*. (2023) that suggest that mutual collaboration for governance with OH stakeholders is key to the success of OH networks and that power should be balanced to ensure country ownership and implementation. To this end, participatory stakeholder engagement is required to co-design activity plans for the intervention(s) that insert themselves into the national OH roadmap. In-country ownership is achieved because a project's logical framework and planned activities are flexible. The flexibility COHESA has in different settings is important for country ownership and allows countries to take on tasks not listed within their country's implementation category. They can also develop new activities that still address relevant OH outcomes within COHESA, even if not initially within their plans.

By aligning with international, regional, and local OH policies and frameworks, COHESA has ensured the avoidance of duplication to have multiplicative OH outcomes. Although challenges were encountered

Table 2. Alignment of capacitating One Health in Eastern and Southern Africa (COHESA) with the quadripartite joint plan of action and the one health high-level expert panel.

	COHESA Work Package One	COHESA Work Package Two	COHESA Work Package Three	COHESA Work Package Four
	Understanding the current OH status within a country	OH governance	OH future workforce	OH implementation
Quadripartite Joint Plan of Action (FAO *et al*., 2022)	Action Track 1: Enhancing OH capacities and strengthening health systems	Action Track 6: Integration of the environment in OH	Action Track 1: Enhancing OH capacities and strengthening health systems Action Track 6 6.4: Create OH academic and in-service training program across disciplines	Action Track 1: Enhancing OH capacities and strengthening health systems Action Track 6: Integration of the environment in OH
One Health High-Level Expert Panel Theory of Change (OHHLEP, 2022)	Pathway 3: Data, evidence, and knowledge	Pathway 1: Policy, advocacy, and finance Pathway 2: Organization development and implementation		Pathway 2: Organization development and implementation

during the initial year of the project, this time has been valuable in gaining a deeper understanding of the OH landscape within each country. It has also allowed for the formation of diverse multidisciplinary teams and fostered collaboration with relevant stakeholders, ensuring their engagement and commitment to project implementation and sustainability.

Overall, COHESA has demonstrated promising outcomes in its efforts to institutionalize OH in ESA. Given the experiences to date, the consortium and multiplier teams are in a better position to develop activities related to the operationalization and implementation of OH in the next stages of the project. The project's methodology and initial results serve as valuable guides for future endeavours to navigate the complex ecosystem of OH stakeholders and address the challenges associated with multi-national projects.

Group Discussion Questions

1. When developing new OH initiatives/projects what are key planning considerations? (For example, knowledge of existing OH initiatives, stakeholders, building on prior initiatives, flexibility, etc.)
2. What role can HEIs play in advancing institutionalization and operationalization of OH at national and subnational levels?
3. How can we capitalize on the numerous existing OH resources and initiatives given the lack of a centralized repository?

Conflict of interest

The authors have no conflicts of interest to declare.

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Further Reading

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