



All in Good Time

Women's Agricultural Production in Sub-Saharan Africa



Overseas Development Administration

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R Grellier

University of East Anglia, Norwich, UK



NATURAL RESOURCES INSTITUTE
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Introduction

This bibliography represents the first part of a study of women's participation in agricultural production in the semi-arid regions of Sub-Saharan Africa. In the semi-arid tropics issues surrounding labour and especially timeliness of required farm operations are fundamental to successful crop production and determine technical options. This study will investigate the various ways in which timeliness problems are, and might be, addressed.

Because of the potential gains in timeliness through the use of draught animals in regions where other sources of energy for mechanisation are either not available or too expensive for most smallholders, the development and extension of this energy source has long drawn the attention of researchers and planners. At the same time, it is viewed as a major source of rural differentiation and considerable attention has, therefore, been given to extending its use more widely within agricultural communities. The study aims to look in detail at ways in which the use of draught animals affect labour and resource use, and generate increased income differentials at the household and community level and to investigate avenues for using existing draught animal capacity more advantageously, especially by women.

Women are increasingly reported to be the key persons responsible for providing household food supplies in Sub-Saharan Africa but have minimal access to draught animal power. In addition, women's farm activities are only peripherally mentioned in economic statistics and planning documents are rarely the focus of any detailed cropping systems work. This study looks specifically at women's agricultural strategies, especially as these relate to their use of particular tools etc. and crop production techniques on fields for which they are directly responsible.

The bibliography attempts to address these concerns by pulling together existing information on women's crop production in the context of an analysis of how women presently address critical timing issues. While the use of draught animal power is only one way in which farmers address timing issues, because of the significance attributed to this power source as an avenue for achieving increases in agricultural production, for use by men, this forms a central part of the documentation reviewed in the bibliography.

The importance of Boserup and her seminal work 'Women's Role in Economic Development' (1970) in drawing attention to the link between the use of draught animal power (for ploughing) and the role of women in agriculture, is undeniable. However, her analysis was based on minimal information on precisely how these relations operate in practice, the reasons for variations found and the extent to which these variations might relate to individual or household strategies. Two decades later, much more information is available on how new levels and types of differentiation and changes in production relations both within and between households are associated with the introduction of new technologies.

Although it is widely acknowledged that women have less access than men to draught animal power, overall differences in access to resources among women themselves are less widely understood. Emphasis is therefore given in the bibliography to studies which have tried to provide a more detailed understanding of the different positions in which women find themselves as independent operators, assistants on the fields of others, 'unpaid' workers on family fields, hired labours, and the extent to which these differences might be linked with variations in access to, and control of, technology and other resources. Attention is also drawn to other, now well known, variables affecting women's agricultural activities.

Overall it is possible to identify three general conclusions from the literature reviewed:

- that while gender differences in access to land are significant, it is issues surrounding labour use, and timeliness, which are significantly differentiating variables for women.
- that technical options are not neutral in the way they impact on individuals, households and rural communities.
- that the impact of similar options will vary according to contextual situations and the way and manner in which an options is introduced.

The literature can also be divided into three clear subject areas: access to and control of agricultural resources including land, labour, capital, agricultural services and information; division of labour and timeliness of task completion; technology and production relations.

Access to resources

In all the literature the inequality of resource distribution between men and women is highlighted and the negative impact this has on women's independent farming activities is detailed. Considerable emphasis is given to land as the primary production resource, and customary tenure relations which generally disfavour women. Even where legislative changes have occurred, women are shown to experience problems in enforcing their rights in the face of asymmetrical power relations within which these rights are formulated. The ability to benefit from de jure land rights is also associated with access to other resources and this point is well documented and understood.

While the general picture is one of asymmetrical gender relations and more limited resource rights for women, micro studies clearly identify areas of independent production and, therefore, presumably potential avenues for individual growth, especially female headed households and women's independent fields. The agricultural activities of female headed households are fairly widely reported and identified as being particularly resource poor. However, the implications of this for technology development appear to be largely unexplored.

Surprisingly, there is little record of clear targeting of women's tasks, crops and fields, although some writers are calling for this (Starkey). There is little discussion in the more general references on research or extension of the problems that this might raise outside the context of female headed households.

This brings us to the more general question of how providers of agricultural services understand and deal with different types of households. In general we have to conclude that these have yet to be addressed. As Whitehead points out, recognition has now been given to the fact that there are female, as well as male, headed households, but little else. This is true in spite of the fact that there is a considerable body of theoretical and descriptive literature examining the need for cooperation within households at one level and yet the presence of inevitable conflict which arises from the fact that individual household members have different objectives and priorities and are in a more or less secure position. Unless this dilemma is addressed within programmes designed to introduce new technology, problems linked with unequal resource distribution are unlikely to be resolved.

Division of labour and timeliness

As already pointed out, even women who do have rights to land are frequently unable to exercise these because of their labour obligations both within and outside agricultural production. Most studies indicate that work on household or communal fields is prioritised over cultivation of individual fields and there are now numerous publications describing gender

divisions of labour within these fields. Apparently one increasingly frequent response to labour constraints in general by women is the formation of work groups. This would seem to have implications for technology development which have to be considered.

Possibly more important than total labour requirements is the timing of labour inputs during ploughing, planting and, particularly, weeding. A number of documents point to the significance of timeliness in completing operations for determining the selection of crops and crop yields. Given the constraints on women's time due to their dual productive and reproductive roles and, in the case of married women, their conjugal contractual obligations, they are particularly disadvantaged with respect to timeliness. Mechanisation is one response to timeliness constraints frequently mentioned in the literature, but one which generally, to date, has been less accessible to women.

In much of the literature which discusses technology there is a tendency to suggest that gender divisions of labour are fixed. However, longitudinal case studies demonstrate clearly the changing nature of production relations even within the household. Thus both men and women have been reported as constantly negotiating and re-negotiating rights and obligations in the light of new demands and opportunities including those presented by new resources such as technology. In thinking about new technology it is important that this dynamism in social relations is not forgotten.

Technology and production relations

In the literature the word 'technology' is used in its widest sense to refer to hand tools, ploughs, irrigation, crop production, and soil and water management etc. However, within this bibliography emphasis has been given to animal draught as a specific technology which is identified as having significant potential for changing agricultural productivity and continues to feature, therefore, in a number of development programmes.

Mention has already been made of the importance of plough agriculture. The link between draught animal power and the extensification of cultivation stems largely from Ester Boserup (16) in which changes in labour requirements by moving from long to short fallow and from hoe to plough agriculture are described. In general, however, the literature which details crop production techniques etc., tends to be quite separate from the literature concerned with production relations. The work of Berry, Palmer, Guyer and Whitehead provide some of the more interesting analyses based on detailed information on both technology and production relations.

The introduction of draught animal power alters the demands made on labour in general and on women in particular. An aim of the bibliography is to highlight the ways in which this is described as occurring. Although in the literature search particular attention was paid to information on draught animal power, it is important to emphasise that details of other technology and techniques used by women on their independent fields or crops are not given. This must be identified as a serious omission given the stated interest in improving women's agricultural productivity and the importance attributed to technology for achieving this. In saying this, it is not meant to suggest that new or innovative technology is the solution to the subordinate position of women depicted in the literature. In fact, on the contrary, many of the references suggest that women have lost rights as a result of technical change and particularly as a result of the introduction of draught animal power. The interesting dilemma about draught animal power is the significance attributed to it for improving income and welfare, and yet its general inaccessibility to women. Some more positive views about the impact of technological change on women's agricultural activities can be found in the work of Starkey, Berry, Palmer and Guyer.

Increasing commercialisation, population growth and climatic change are widely reported as influencing existing production relations and changing the relevance and meaning of technical innovations. However, as these changes are not explicitly mentioned in all the texts reviewed they are not systematically detailed in the annotations. Nevertheless, the literature should be considered within the broader context of ongoing changes and development.

Organisation and content

The geographical boundary of the bibliography is the semi-arid region of Sub-Saharan Africa. The bibliography does not attempt to cover, in any systematic way, agricultural projects except in the cases where some very specific details are given about women's agricultural production activities or where the programme is targeted specifically at women (Vierstra, Wekwe, Zweier).

Annotations are listed in alphabetical order by the author and numbered by record rather than page. Each annotation contains sub-headings indicating the geographical position by country rather than agro-ecological zone, and the crops mentioned in the source material. The annotation reflects the specific interest of the study rather than the total content of the documents. The length of the annotation is indicative of the level of detail provided on the issues of relevance to the wider study. The annotations are not arranged under subject headings. Rather, author and subject indices are provided to assist the reader to locate relevant material.

The literature reviewed came from a number of sources: the libraries of the University of East Anglia and the IDS, Sussex; private collections belonging to D. Gibbon, C. Jackson and C. Okali of the University of East Anglia, and P. Starkey. The author is also grateful to S. Croxton of ITDG and R. David of Oxfam for their time and assistance.

1. **Abusin, A. *Evaluation of ITDG Support to Kebkabiya Smallholders' Project. Draft ed. Unpublished, 1994.*** Error! Reference source not found.

COUNTRY: Sudan (Darfur State)

CROPS: Millet, groundnuts, okra/lubia.

Women's responsibility for provision of household food requirements leads to their obligatory participation in agriculture, thus 90% of women own fields and own, or have access to, storage facilities. Women contribute 90% of total labour inputs, and participate in all agricultural activities including land preparation. While women have some access to draught animal technology, hand hoes are more widely used. Women's limited cash resources restrict their access to ploughs, although ploughs are borrowed and exchanged. Senior wives appear to have greater access than junior wives. Access to cash is influential on plough ownership, however, concerns that project intervention may lead to preferential access for men are expressed. Women's access to draught power is also discussed. In polygynous households it would appear that the wife's position of seniority may be influential. Systems of exchange are described, ploughs being more commonly loaned than animals. Timing of operations especially weeding, is viewed as the most important variable determining yields. The report focusses largely on ploughing and access to draught power (donkeys).

2. **Afonja, S. *Land Control: A Critical Factor in Yoruba Gender Stratification.*** Robertson, C., and Berger, I., Editors. *Women and Class in Africa.* New York: Africana Publishing Company (Holmes & Meier Ltd.), 1986. Chapter 5.

COUNTRY: Nigeria (South West Region)

Traditional land rights and gender divisions of labour influence women's position in society, but more critical determinants are the presence of export crop production, tenancy systems and paid labour as these directly influence gender relations of production. Wide regional variations in property rights exist with, in some instances, women having greater opportunity to compete for resources. However, ultimate control of land rests with those holding power at the political or community level. In patrilineal areas of Yorubaland (e.g. Ile-Ife), interaction between capitalism and existing property law results in uniform proletarianization of women. Women are generally denied access to land (only 1.5% of land in the research area is owned by women farmers) while their labour is viewed as obligatory and intrinsic to cash crop production. Further variation is seen in Abeokuta, where adoption of 'European land tenure systems' has enabled individuals to purchase land. The existence of 'slave' and wage labour has enabled women to move from agricultural production to other entrepreneurial activities in the rural and urban economies. Traditional land rights and gender divisions of labour influence women's position in society, but more critical determinants are the presence of export crop production, tenancy systems and paid labour as these directly influence gender relations of production. The author concludes that gender inequality should be incorporated into the mainstream discussion of class formation in Africa in order to develop a more comprehensive theory of social change and development.

3. **Asamba, I., and Thomas-Slater, B. P. *From Cattle to Coffee: Transformation in Rural Machakos*. Ecogen Case Study Series. USA: Clark University, 1991.**

COUNTRY: Kenya (Machakos Region)

The paper comprises a case study of two villages. An increase in off-farm employment for men has led to an increase in decision-making by women in domestic affairs, crop and livestock production. At the same time, changes in land tenure have led to greater insecurity of land rights and lack of control of income from cash crop production, for women.

4. **Azikiwe, U. *Appropriate Technology for National Development: A Case for Rural Women in Nigeria*. WID Forum XXI . Michigan: Office of Women in International Development, Michigan State University, 1990.**

COUNTRY: Nigeria

The paper reviews the potential of technological innovations aimed at improving the productive efficiency of rural women mainly in the areas of harvesting, transportation, storage, cooking and crop processing. Constraints to the introduction of technologies and recommendations for implementation are suggested. Constraints are seen to fall into four categories: political, socio-cultural, economic and technical.

5. **Babalola, S. O., and C. Dennis. *Returns to Women's Labour in Cash Crop Production: Tobacco in Igboho, Oyo State, Nigeria*. Davison, J., Editor. *Agriculture, Women, and Land*. Boulder, USA: Westview Press, 1988. Chapter 4.**

COUNTRY: Nigeria (Oyo State)

CROPS: Tobacco, cocoa, maize, vegetables.

The role of Yoruba women in food and cash crop production is described. Unable to inherit land, Yoruba women do not appear to be attempting to obtain rights of access to land for independent production due to their labour obligations to cash crop production of spouse. Tobacco production is strongly organized around family production units, within which women have no publicly recognized role although internal allocation of labour is clearly defined by gender.

6. **Baker, D. *Traction Use in Shoshong and Makwate*. Agricultural Technology Improvement Project Working Paper 22 . Gaborone, Botswana: ATIP, Ministry of Agriculture, Undated.**

COUNTRY: Botswana (Shoshong Region)

The paper reviews traction use in two villages. Information is provided on differences in traction use by community, household, gender and season for each village. Information and gender analysis is also provided for traction activity, number of times animals were used per activity, patterns of use and type of traction used. Cooperative and exchange arrangements are common but commercial hire poorly developed. The system of traction is changing with donkeys providing more traction hours than cattle, and greater use being made of traction for transport than ploughing although use varied substantially by household type, with FHHs showing greater utilisation of traction for domestic transport activities such as water collection.

7. **Baker, D. C., and H. S. Feldstein. Botswana: Farming Systems Research in a Drought Prone Environment, Central Region Farming Systems Research Project. Feldstein, H. S., and Poats, S. V., Editors. *Working Together: Gender Analysis in Agriculture*. USA: Kumarian Press, 1989. Chapter 3.**

COUNTRY: Botswana (Central Region)

CROPS: Sorghum, maize, cowpeas, jugo beans, melons

The structure of agriculture is described in two Central Region research sites. Empirical information is given on a range of subjects including ownership of assets, labour use and crop production etc. by different types of FHH. The ability of women to gain land by allocation or inheritance is discussed. 'Traditional' divisions of labour are described, women being responsible for planting, weeding, harvesting and threshing, with peak labour requirements for women occurring during January, May and June. Despite women having the largest labour input in agriculture they appear to lack control of draught animal power although FHHs may hire this power source. Control of this resource is recognized as critical for timely ploughing.

8. **Becker, H. Labour Input Decisions of Subsistence Farm Households in Southern Malawi. *Journal of Agricultural Economics* 41.2 (1990): 162-171.**

COUNTRY: Malawi (Southern Region)

The paper presents a farm-household model which allows analysis of labour input decisions for risky agricultural technologies and off-farm employment. A stochastic linear programming model is applied to a 'typical rural household'. Opportunity costs of time of family members and the risky nature of income generated using traditional or introduced technologies explain the weak adoption of yield increasing technologies. It is concluded that a combination of labour resources, off-farm employment opportunities and risk perceptions of different technologies determine labour allocation and the willingness to adopt new technologies. It is suggested that special extension programmes for family members with low off-farm employment opportunities will increase adoption of new technologies and reduce anticipated subjective income deviations for yield-increasing innovations.

9. **Beerling, M-L. *Ten Thousand Kraals: Cattle and Ownership in Western Province*. Lusaka, Zambia: Animal Disease Control Project Western Province, n.d.**

COUNTRY: Zambia (Western Region)

The general assumption that women do not own cattle is challenged. One third of all cattle owners in this region are women. However, women's animals are generally left with a father or brother and not herded by women. Cattle are primarily obtained through inheritance from parents and through *lobola* (bridewealth) received for daughters at marriage. It is unusual for women to accumulate sufficient capital to purchase cattle themselves. Recently development projects have encouraged women to use oxen for ploughing by running training courses.

10. **Berry, S. *No Condition is Permanent: The Social Dynamics of Agrarian Change in Sub-Saharan Africa*. London: University of Wisconsin Press, 1993.**

COUNTRY: Sub-Saharan Africa

CROPS: Maize, arrowroot, vegetables, cassava.

A comparative study of processes of change within African agrarian systems. Four major case studies are drawn from Ghana, Kenya, Nigeria and Zambia. Information is provided on historical (20th century) aspects of change in access to, and use of, agricultural resources. Emphasis is placed on the need to move from analysis based on structural organisation of agrarian societies to analysis based on a recognition of their fluidity. Such analysis will enable fuller understanding of the wider social and political processes of change. Issues of control and access to resources are seen as highly influential for women's independent participation in agriculture. Land rights are strongly linked to traditional networks, social identity and status with the result that women often have difficulty in exercising their rights. Commercialization has led to the reorganization of social networks and frequently to exclusively male control of resources. However, occasional long term benefits to women's land rights may be seen (e.g. Kenya). Issues of timeliness in relation to choice of crops and agricultural practices are discussed, with examples drawn from Zambia, Zaire and Nigeria. Methods of cultivation adopted in Zambia have led to an expansion in weeding requirements, thus increasing demands on women's labour. In Zaire during the 1980s women altered cultivation of their own fields (i.e. increased planting of cassava, staggered planting and harvesting times and reduced fallows) to allow greater flexibility of labour requirements. In Nigeria, during the 1980s Yoruba women changed to monocropping of cassava, enabling them to hire labour and sell a large percentage of the crop.

11. **Blowfield, M. *The Allocation of Labour to Perennial Crops: Decision-making by African Smallholders*. Socio-economic Series 3. Chatham, UK: Natural Resources Institute, 1993.**

COUNTRY: Africa

The important role of gender in labour decision-making strategies is recognized with general divisions of labour occurring. Cultivation of crops for consumption is frequently the responsibility of women although differentials between production-consumption groups and accumulation groups affects the level of direct and indirect benefits experienced by women. The danger of presenting over-simplified dichotomies associating men with cash and women with subsistence is highlighted, with examples from a number of sources given of female-owned holdings. In some situations men have dominated perennial cropping, depriving women of access to resources. Instances of crop selection based on the labour flexibility inherent in production are described using an example from Malawi where women chose groundnuts over tobacco due to its greater stability in terms of time management and the absence of peak labour demands. Gender based discrimination in terms of marketing are noted. The utilisation of hired labour and employment as hired labour for women is discussed - women's access to labour being determined by socio-economic class. Women, however, are increasingly working as hired labour in Eastern Region, Ghana. It is suggested that socio-economic differentiation between women should be studied further, although it is recognized that FHHs are generally most disadvantaged. Examples of women's reaction to change are given by examples from Kenya and Ghana. The multiple tasks fulfilled by women in terms of productive and reproductive activities are described with seasonal differentiation noted. It is suggested that the need to balance these roles restricts women's ability to adapt to

new production methods and alternative income generating activities such as entrepreneurship and off-farm work.

12. Bohannan, P., and Bohannan, L. *Tiv Economy*. Evanston, USA: Northwestern University Press, 1968.

COUNTRY: Nigeria (Northern Region)

CROPS: Yams, millet, guinea corn, beniseed

A description of the organisation of production including cultivation practices amongst the Tiv of northern Nigeria. Detailed information is provided regarding the sexual division of agricultural labour. Both men and women are actively involved in production. Size and location of farm is generally organized by adult males of the compound although the compound head has final control. An area of land (*dechi*) is allocated to the senior women for yams. Smaller plots are allocated to junior women. Detailed information is given regarding cultivation practices. The majority of women's agricultural work is with yams although they also clear land for fallow crops, and plant and harvest peanuts and bambara groundnuts. Kitchen gardens belong to men who may allocate the area to their wives. Women perform a greater variety of tasks than men and are occupied all year in planting, harvesting, weeding and preparation by drying of fruit and vegetables.

13. Boserup, E. *The Conditions of Agricultural Growth*. London: Earthscan Publications, 1993.

COUNTRY: Numerous (including Africa).

A discussion of the relationship between population growth and agricultural development and a critique of the neo-Malthusian School. Consideration is given to changes in labour requirements following the movement from long to short fallow, from root crops to cereals, and the introduction of draught animals.

14. —. *Women's Role in Economic Development*. New York: St. Martin's Press, 1970. Part 1.

COUNTRY: Examples drawn from Tanzania, Nigeria, Cameroon, Uganda

The role of women in agriculture within various agricultural and social systems is described. Data is supplied on differentials between male and female input into family farms, illustrating the general female bias of agricultural work. The first section of the book examines women's tasks in agricultural production within a number of geographic regions. Changes in women's land rights and crop ownership are correlated with the move from shifting cultivation to cash cropping. The replacement of hand hoes by ploughs is cited as a reason for female separation from agricultural production, however, the participation of Ugandan Bantu women in ploughing is also cited. Examples of women's protests against loss of land rights in Nigeria and Cameroon are described.

15. **Brown, B. Women in Botswana. Parpart, J. L., Editor. *Women and Development in Africa: Comparative Perspectives*. Dalhousie African Studies Series 7 . Lanham, USA: University Press of America, 1989. Chapter 12.**

COUNTRY: Botswana

The chapter describes the historical context of Botswana's political economy with particular reference to its effect on women, their changing position within society and the development of the women's movement. Details of women's access to land and cattle are given. Since independence women have had *de jure* access to land but are often unable to utilize their rights. FHHs, in particular, have difficulty in obtaining access to land and cattle. Dependence on borrowing of draught animals leads to delays in ploughing and production losses. FHHs also generally plough less frequently than MHHs. When FHHs do have access to draught power, smaller areas of land are ploughed at higher cost. Cattle serve a number of purposes within society including draught animal power. Male control of cattle results in women's dependence on family ties, rather than direct production, for financial security. Increases in the commercial value of cattle have resulted in a decline in traditional patterns of reciprocity, thus exacerbating social and economic differentiation. In conclusion Government policy towards women is reviewed.

16. **Bryson, J. Women and Agriculture in Sub-Saharan Africa: Implications for Development (an Exploratory Study). Nelson, N., Editor. *African Women in the Development Process*. London: Frank Cass, 1981.**

COUNTRY: Burundi, Cameroon, Ghana, Lesotho

Agricultural production systems are described largely based on studies by Laburthe-Tolra and Guyer. The chapter highlights frequent shortfalls between knowledge of the specifics of women's roles and implications of this information for agricultural transformation and overall development. It is suggested that a better understanding is needed of the interaction between social and production systems. Using information from Ghana, Burundi, Lesotho and, in particular, Cameroon the predominance and importance of female labour in food crop production in Sub-Saharan Africa as compared with the rest of the world is illustrated. Specific attention is given to factors supporting the division of labour in agriculture, particularly the means of acquiring land and social imperatives sustaining the predominant role of women in food crop production. In Cameroon women are allocated independent plots by their husbands but the increase in men's off-farm economic activities has resulted in a withdrawal of their labour from much agricultural production and the increasingly intensive cultivation by women of smaller plots due to labour shortages. Increasing commercialization has increased the importance of female labour in food crop production. This served two purposes, to guarantee food supplies and to protect property rights and, in many cases, increased income earning opportunities (e.g. selling food) for women. It is suggested that the experience of Cameroon illustrates the structural importance of women in food crop production which cannot easily be changed within the present social or economic structures. The sectorisation of agriculture and industry that has occurred within the development process is described, illustrating a growing gender differentiation in activity. This has enabled a squeezing of the agricultural sector to finance the development of a wide range of sectors, and to increase the extent of investment to produce capital outside agriculture, although not always to the detriment of women. The need to increase the efficiency of women's agricultural work and/or assistance with domestic responsibilities is described using Luo agricultural change as an example. It is suggested that if women's position is to be protected then development efforts should concentrate on ensuring that the men continue to have sufficiently attractive alternative options (e.g. accessible

small-scale industrial development). The importance of female extension workers is stressed, as is the need for studies of crop production systems in order to find solutions within women's management capabilities.

17. **Camara, P. The Role of Draught Animal Technology in Rural Development in the Gambia. den Hertog, G., and van Huis, J. A., Editors. *Proceedings of the International Seminar*. Edinburgh, Scotland, 2 Apr. 1990. The Role of Draught Animal Technology in Rural Development . Wageningen: Pudoc Scientific Publishers, 1992.**

COUNTRY: Gambia

CROPS: Millet, sorghum, rice, maize, groundnuts, cotton

During the 1950s animal drawn implements, using donkeys, oxen and horses, were introduced in order to achieve substantial increases in crop production. Stage I involved the change from hand cultivation to the use of single purpose animal-drawn implements for land preparation. This was followed by Stage II which involved the move from a single purpose implement to a multi-purpose animal-drawn implement package which could perform most field operations. As a result, Gambia is highly mechanized in comparison with other African countries, with over 70% of all production units owning at least one draught animal. Although women play an important role in agricultural production they have limited access to farm inputs and credit due to their significant involvement in subsistence production. Men have assumed control of technological innovations in due to the lack of training given to women. The need for a semi or fully mechanized system of paddy cultivation is stated, as cultivation of paddy is labour intensive but currently unmechanized. Women experience lack of time to fulfill both reproductive and productive activities. This could be addressed by appropriate technology for soil tillage in the swamps and personal access to draught animals and implements. Possible solutions suggested are access to direct production support (particularly credit), training in the use of implements and care of draught animals and increased availability of appropriate implements for swamp rice conditions.

18. **Carney, J. A. Struggles Over Land and Crops in an Irrigated Rice Scheme: The Gambia. Davison, J., Editor. *Agriculture, Women and Land*. Boulder, USA: Westview Press, 1988. Chapter 3.**

COUNTRY: The Gambia (East Region)

CROPS: Rice, groundnuts

Carney describes the impact of an irrigated rice production project on women's access to and control of productive resources. Although there is a hierarchy of resource allocation through village and household male elders, women may obtain usufructury access to communal land in return for labouring on household fields (*maruo*). Ownership rights may also be established through clearing uncultivated and unclaimed swamp rice plots (*kamanyango*), and through inheritance. The traditional autonomy of inheritance patterns was highly influential regarding women's access to land and allocation of their labour - ownership of land leading to independence from household claims. Mandinka women are particularly dependent on their husband's socio-economic status in terms of obtaining access to land. At the time of the study 29% of women's rice plots in the area were *kamanyango*. These plots are also a source of cash income for women. The Mandinka farming system illustrates the clearest example of gender differentiated access to land and greatest intensification of female labour in rice cultivation, with women concentrating on rice production for home consumption while men

focus on cash crop production. The history of male resistance to female efforts to gain improved land rights is also described. This resistance is usually due to colonial or project interventions - with the frequent result that women lost previously well established means of access, through the establishment of 'new traditions'.

19. Carney, J., and M. Watts. *Manufacturing Dissent: Work, Gender and the Politics of Meaning in a Peasant Society. Africa* 60.2 (1990): 207-241.

COUNTRY: The Gambia (Eastern Region)

CROPS: Rice, groundnuts, millet, maize

The way new technical and social relations of production, particularly associated with mechanized double-cropping of irrigated rice, have changed the gender differentiation of crop production in this location are described. As a result of the introduction of a closely supervised production routine being imposed upon long-standing work rhythms substantially increased demands are made on domestic labour recruitment. This has led to strains in culturally dominant representations of work, labour obligations and property rights and substantial declines in crop yields. These strains are evidenced in gender conflicts, particularly in terms of intra-household relations, juridical battles over divorce and renegotiations of the conjugal contract (i.e. production politics). Thus traditional gender differences in crop production (groundnuts being a male crop, and swamp and tidal rice production dominated by women) has been altered by state and foreign intervention which has led to the entry of men into rice cultivation. Dry-season rice production introduced farming practices for which there are no customary labour arrangements, and wet-season irrigated production necessitated work routines which conflicted with groundnut, millet and maize cropping cycles. Increased demands on household labour meant that external production relations between growers and management have reverberations on the household, thus family politics and resistance become part of production politics. The transformation of cereal production contributed to both a deterioration in women's economic position and to an increase in demands on their labour. Changes in household property relations may block women's customary crop rights and diminish control over the products of their labour. The ensuing bargaining by women for labour compensation resulted, in this case, in the formulation of a number of strategies which varied depending on the type of household and its access to resources. One of the strategies discussed involved the transformation of women's reciprocal labour networks.

20. Carr, M., Editor. *Women and Food Security*. London: Intermediate Technology Publications, 1991.

The volume contains background country papers on women's access to, and use of, improved food related technologies, especially mechanized crop production utilizing draught animal power in the SADCC Region.

COUNTRY: Malawi

Detailed information is provided on field and crop allocation by gender, and the use of different crop production techniques. In Malawi 85% of rural women are involved full time on their own holdings, largely growing crops for home consumption but also producing for sale tobacco, cotton and tea. Up to 28.8% of rural households are headed by women. In both these and a number of male headed households, women undertake most of the decision-making although this is related to the agricultural potential of land and the preponderance of male off-farm

activities. The labour input of women in relation to that of men is linked to crop type rather than to marriage system: most cash crops require equal or slightly higher inputs by women, whilst maize cultivation requires twice the input. In general women spend 9-10 hours every day in farming tasks. Animal draught power is used mainly in the Northern Region. Where rice is cultivated women frequently carry out traditionally male tasks, including ploughing with oxen, levelling, planting, fertilizing and weeding, whilst men assist women with harvesting and threshing. Ridge cultivation, on the other hand, is carried out with traditional or tanged hoes.

COUNTRY: Zambia

CROPS: Sorghum, finger millet, cassava, beans, groundnuts, green vegetables

In Zambia where women are numerically dominant in the rural labour force, they generally spend more time than men in food and cash crop production on small scale commercial and household farms. Most of the major food crops are viewed as 'women's' crops, however, women, and FHHs in particular, are least advantaged in terms of access to basic resources and agricultural services. FHHs also comprise the largest percentage of households specializing in livestock production with little or no other agricultural activity. Although there is considerable variation in the division of labour by crop, women generally undertake harvesting, weeding, shelling, winnowing, storage and preparation. They are also involved in planting and transportation depending on the method used. Time constraints, particularly for FHHs are recognized as problematic. With regard to timeliness, weeding creates major labour bottlenecks. Hoe cultivation is predominant as animal draught power (oxen) is generally limited to wealthier households. Although there is a system of reciprocal exchange of animals and implements, resource poor households are usually excluded from these draught power sharing relationships. Some discussion is given to the negative effect on women of the introduction of draught oxen, mouldboard and tine ploughs, through increased weeding requirements.

COUNTRY: Botswana

Due to the high level of male out-migration most farming activities (with the exception of ploughing) and decision making are undertaken by women (35% of rural households are *de jure* FHHs, with a higher percentage being *de facto* FHHs). Labour constraints place considerable limitations on agricultural production. The replacement of broadcasting by row planting through the use of plough planters appears to have eased some of the work load for women. Hand weeding has also been reduced. Considerable information is given on research and technology development specifically focussing on women.

COUNTRY: Zimbabwe

The Zimbabwe case provides detailed descriptions of mechanization techniques that have not been taken-up, particularly ploughs, planters and lifters, and the disadvantaged position of women. The introduction of cultivators operated by men for weeding fields has made women's weeding activities more difficult by displacing them to manually weeding along fields.

COUNTRY: Tanzania

CROPS: Cassava, sweet potatoes, yams, vegetables.

Most agricultural production is small scale, with women playing the major part. Data are given on the hours per annum spent by men, women and children on a range of activities, including agricultural production. Although mechanization techniques are used, the majority of cultivation

(82%) is carried out using hand tools. Animal traction is acknowledged as having increased women's workload in planting, weeding, harvesting and transporting of produce.

21. **Carr, M., and Sandhu, R. *Women, Technology and Rural Productivity: An Analysis of the Impact of Time and Energy-Saving Technologies on Women.* UNIFEM Occasional Paper No. 6 . New York: United Nations Development Fund for Women, 1988.**

COUNTRY: World, especially Africa

The paper reviews the state of knowledge on the impact of new technology on women's agricultural productivity and identifies areas for further research and action. Examples are drawn from Malawi, Ivory Coast, Nigeria, Gambia and Mozambique, among others. Initiated through awareness of lack of up-take of many improved technologies by women and the realization that there is no clear correlation between time released from domestic activities and reinvestment in food production, recognition is given to the importance of household composition, marriage system and labour bottlenecks for analysis of time allocation in agriculture. Information is provided on energy expenditure for different farm tasks. The most energy consuming activities identified are ridging, carrying heavy loads, pounding, lifting root crops, threshing, weeding and spreading manure - all of which are largely female tasks. Data are provided from Malawi on the gender differentiation of work for maize and tobacco production, and on labour supply fluctuations for rice and cassava production. It is suggested that the female labour supply may be the limiting factor for crop production as many farmers plant according to their weeding capacity (weeding being a predominantly female activity). The impact of distance of fields from dwelling on time use is also discussed. Distances to family and personal fields of both men and women are shown for Ghana, Kenya and Sierra Leone. Finally, reference is made to the lack of empirical data available regarding the impact on women of new technologies. It is argued nevertheless that, in Africa, women would improve the productivity of their own fields through timeliness and increased intensity of cultivation if their obligations on other fields were reduced.

22. **Carr, S. J. *Technology for Small-Scale Farmers in Sub-Saharan Africa: Experience with Food Crop Production in Five Major Ecological Zones.* World Bank Technical Paper Number 109 . Washington, D.C., USA: The World Bank, 1989.**

COUNTRY: Sub-Saharan Africa

Detailed information is provided on a range of subjects including available technology to overcome labour constraints, experience of Bank funded projects in overcoming labour and soil fertility constraints and crop production, soil and water conservation techniques and strategies for increasing household security.

23. **Chabala, C., and R. N. Gichira. Zambia: Intrahousehold Dynamics and FSR/E in Zambia; A Case Study of Traditional Recommendation Domain 3 in Central Province. Feldstein, H. S., and Poats, S. V., Editors. *Working Together: Gender Analysis in Agriculture*. USA: Kumarian Press, 1989. Volume 1, Chapter 9.**

COUNTRY: Zambia (Central Province)

CROPS: Maize, millet, sorghum, cassava, cotton, sunflowers,

Information is provided on recent agricultural changes, in particular the introduction of oxen for draught animal power. Since this is an area of recent male out-migration, women's labour requirements have increased substantially. Problems of timeliness of planting are mainly associated with lack of access to animal traction, FHHs are seen to be particularly vulnerable. However, although oxen may be owned by women they are not used by them and labour must be hired for such activities.

24. **Cheater, A. Issues of Energy Autarky and Interdependence among Small-scale Commercial Farmers in Zimbabwe. Haswell, M., and Hunt, D., Editors. *Rural Households in Emerging Societies*. Oxford: Berg Publishers Limited, 1991. Chapter 10.**

COUNTRY: Zimbabwe (Msengezi Region)

CROPS: Cotton, maize, livestock, vegetables.

Within an analysis of differing energy sources and their use, information is given regarding the role of women in agricultural production. Women's role in field production is considered so critical that their domestic tasks are considerably smaller than in many other regions/countries. In this area, therefore, draught oxen use by both men and women is widespread (women even competing in ploughing competitions).

25. **Chimedza, R. Women, Natural Resource Management and Household Food Security: An Overview. Rathgeber, E. M., Editor. *Women's Role in Natural Resource Management in Africa*. Canada: International Development Research Centre, 1989.**

COUNTRY: Africa (general)

The paper provides an overview of women's involvement in natural resource management highlighting linkages with household food security. Entitlement to land is seen as the key factor without which access to other resources found on land is limited. Some of women's soil management problems continue due to lack of labour to implement soil conservation techniques. At times of labour shortfalls, women face conflicting interests between provision of water for livestock which are an important source of draught power and protein, and that for the household and vegetable plots.

26. **Cloud, K. Sex Roles in Food Production and Distribution Systems in the Sahel. Creevey, L. E., Editor. *Women Farmers in Africa: Rural Development in Mali and the Sahel*. Syracuse, New York: Syracuse University Press, 1986. Chapter 1.**

REGION: The Sahel

CROPS: Millet, sorghum

Information is provided on the roles and responsibilities of women within Sahelian food production, distribution and processing systems of both sedentary farmers and pastoralists. Within subsistence food production of sedentary farmers, millet and sorghum are perceived to be men's crops although women plant and assist men with weeding. Most women have vegetable gardens where vegetables are grown for sauces and trade. Recent changes in the Sahel and the Sahel Development Programme are described, as is the neglect of women's roles in food production. The introduction of plough agriculture has led to shifts in the control of land and the marginalisation of women from independent access for production, although examples of women's resistance are noted.

27. **Creevey, L. E. The Role of Women in Malian Agriculture. Creevey, L. E., Editor. *Women Farmers in Africa: Rural Development in Mali and the Sahel*. Syracuse, New York: Syracuse University Press, 1986. Chapter 2.**

COUNTRY: Mali

The paper focusses on the interdependence and complexity of the roles of men and women in the process of change within agricultural production systems. The author criticizes stereotypical views of the marginalisation of women within agricultural production, describing the dependence of men in many ethnic groups on the activities women perform (e.g. planting, weeding and harvesting); and refuting the clear dichotomy of gender and cash crop or subsistence production. Although women do appear to have been marginalised to a degree by changes in agriculture it is important to fully understand social relationships to understand the reasons for change and its effects. Historical changes in the role of women in Malian agriculture are described as are the variation in women's roles by ethnic group. The need for analysis at the micro level of a village system is stressed, as is the need for understanding of the complexity of ownership of the factors of production.

28. **Davison, J. Changing Relations of Production in Southern Malawi's Households: Implications for Involving Rural Women in Development. *Journal of Contemporary African Studies* 11.1 (1992): 72-84.**

COUNTRY: Malawi

The failure of externally inspired income generating projects is attributed to a lack of sensitivity to existing relations of production within local communities. The author argues that assumptions of co-operative labour are not relevant to matrilineal societies where women have direct control over land inherited through matrilineal descent groups. Frequent lack of distinction between concepts of co-operative production, communal production and collective production is criticized, suggesting the need for more rigorous, context-specific definitions. Changing household relations of production that have contributed to reductions in collaborative labour and a related increase in individualized production are also described. Since the 1930s dependency on market exchange has increased as has land scarcity and male migration. In female headed households women usually depend on their own labour for maize production

(i.e. carrying out land preparation, planting, weeding, storage and seed collection). Within jointly headed households there has been an increase over time in the contribution made by children and hired labour. Women producers depend on minimal collaborative inputs from other women (largely sisters), however, jointly headed households draw on almost twice the amount of sister's labour than do FHHs during harvesting. Increasing utilisation of hired labour is attributed to a growing preference to maximize individual profits, particularly among women who produce both subsistence and cash crops. Increasing land scarcity is resulting in strained relations between sisters with adjacent plots of land, due to anxiety over future inheritance of land. It is suggested that the increasing numbers of FHHs in Southern Malawi, and rising costs of hired labour, will result in increasing collaboration during times of peak labour requirements. It is concluded that the preference for individual production will prevent women from adopting new technologies and techniques that are dependent on increased labour inputs. As a result, development projects should take into account the socio-cultural factors of production in order to increase the chances of sustainable change.

29. —. Land Redistribution in Mozambique and its Effects on Women's Collective Production: Case Studies from Sofala Province. Davison, J., Editor. *Agriculture, Women, and Land: The African Experience*. Boulder, USA: Westview Press, 1988. Chapter 11.

COUNTRY: Mozambique (Sofala Province)

CROPS: Maize, cassava, vegetables, rice, beans.

Consideration is given to the extent to which it has been possible to restructure gender relations of production through land redistribution and collective production, much of which has been focussed specifically at women. Two cooperatives are studied from which it is concluded that benefits may not be universal to all women, and that adverse effects may be experienced. During the colonial period increasing male labour migration led to an increase in women's participation in agricultural production and changes in division of labour, with women assuming sole responsibility for both cash and subsistence crops.

30. —. Who Owns What? Land Registration and Tensions in Gender Relations of Production in Kenya. Davison, J., Editor. *Agriculture, Women, and Land: The African Experience*. Boulder, USA: Westview Press, 1988.

COUNTRY: Kenya (Central and Western Province)

CROPS: Cocoa, yams, tobacco, tea, maize, coffee, cotton, some groundnuts and onions, maize, beans, bananas, cassava, potatoes, vegetables

The chapter is concerned with the historical dialogue between policy-makers and smallholder households that has influenced women's access to land and their role in production. Land rights were historically patrilineal, acquired through membership of lineages, but women had guaranteed rights to, and control of, arable plots through male heads of household. Attitudes to land allocation are examined using household production as a means of analysis. Intra-household labour exchange is uneven with greater assistance being given by women to men's cash crops than is reciprocated for subsistence crops produced by women. Only unmarried women may legally inherit land, but seldom do so. Women are increasingly being allocated poorer quality land and smaller plots. As a result co-wives, in particular, experience limited access to land, such that it may be insufficient to produce the household's food requirements. Changes in land tenure that have proved detrimental to women's usufruct rights

are described, together with the impact of land registration on women's agricultural production (e.g. the Swynnerton Plan). The breakdown of women's access to, and control of, land is shown to be a critical factor for women's independent production. Women's changing prioritisation of labour is described (i.e. increasing time being spent on cash crops), leading to potential problems regarding family food production. There appears to be an inverse ratio between the size of land holding and the amount allocated to food production. Examples are given of women's protests to compulsory planting of grass, and of protests through collective action against cash crop production policies.

31. **Day, J. Gambian Women: Unequal Partners in Rice Development Projects?**
Nelson, N., Editor. *African Women in the Development Process*. London: Frank Cass, 1981.

COUNTRY: Gambia

CROPS: Rice, sorghum, millet, maize, groundnuts

The paper describes the way in which failure to appreciate the complexities of the existing farming system, in terms of divisions of labour and variations in the control of different crops, leads not only to deficiencies in project design but also to increasing divisions within households. Amongst the Mandinka clear divisions of labour existed, with women growing rice for subsistence purposes in tidal swamps, inland depressions and on hydromorphic soils. Men cultivated groundnuts, sorghum, maize and millet on the free-draining upland. In addition to household fields (*maruo*), both men and women had access to individual fields (*kamanyango*). Rice might be grown on both types of fields but for different purposes: *maruo* crops were generally cultivated by women for household consumption whilst *kamanyango* crops belonged to the cultivator and could be disposed of. Women might pay for tractor ploughing of their rice fields. In practice, women's rice crops could be purchased by their husbands or, more frequently, given to the *sinkiro* (household cooperative group) if the *maruo* crops are insufficient. In the case of divorce it is possible that women's rights to their crops may be denied. Sex segregated cooperative work groups occur although women's groups may be headed by a man and thus have some dependence on a male work force. There are four different forms of land ownership, one being individual. Women are able to establish independent rights by land clearance and cultivation. In turn this land may be given away or inherited by children. Women may also acquire access to land by leasing. In the pre-colonial period reciprocal rights and duties were historically divided between men and women, however, women's position has become increasingly disadvantaged, largely through the introduction of cash cropping. Increasing tensions are occurring regarding land ownership rights, with the tendency of men to demand control of land. However, women generally administer *maruo* rice fields which may, in turn, be transferred to young women marrying into the compound. The introduction of irrigated rice projects led to a reduction in the land available to women. During the dry season women had few agricultural demands and undertook waged labour, however during the rainy season they may grow their own rainfed and tidal swamp rice, with the result that female wage labour is in short supply.

32. **Dixon-Mueller, R. *Women's Work in Third World Agriculture*. Women, Work and Development 9. Geneva, Switzerland: ILO, 1985.**

COUNTRY: World-wide

The book addresses a number of methodological issues relating to the conceptualization, collection, and interpretation of indicators of the sexual division of labour in Third World agriculture. It identifies distinct dimensions of the division of labour in agricultural production, and illustrates a variety of measurement techniques and indicators of gender differences in task specialization, access to farm resources, time-use, productivity, returns to labour and labour force participation. The usefulness and reliability of information obtained by different methods of data collection is discussed.

33. **Due, J. M. *Policies to Overcome the Negative Effects of Structural Adjustment Programs on African Female-Headed Households*. Gladwin, C. H., Editor. *Structural Adjustment and African Women Writers*. Gainesville: University of Florida Press, 1991. Chapter 4.**

COUNTRY: Zambia, Tanzania, Malawi

The paper provides comparative descriptions of female and male headed households in Zambia, Tanzania and Malawi. Land size, total value of crop production, crop sales and number of visits by extension workers was smaller for FHHs than for MHHs. FHHs place a greater emphasis on other sources of income. Differentiation also occurred in type of crop planted. FHHs planted a greater proportion of food crops e.g. maize in Zambia, and maize, beans, cassava and vegetables in Tanzania. The main labour demands for women occur from May to July for bird scaring, maize harvesting and shelling. Information is given regarding ownership of draught animal power. FHHs own fewer oxen and must, therefore, hire oxen and labour for land preparation. However, a smaller percentage of FHHs hire oxen than do MHHs. Similar findings occur in Malawi, where FHHs put greater emphasis on production of beans, rice and sugarcane. Government programmes aimed at assisting rural women are also discussed.

34. **Due, J., and Magayane, F. *Changes Needed in Agricultural Policy for Female-Headed Farm Families in Tropical Africa*. Working Paper No. 199 . USA, Michigan: Michigan State University, 1989.**

COUNTRY: Tropical Africa

The paper describes the constraints under which FHHs operate and discusses whether a separate policy focus is required. FHHs are described as having less land and labour available for agricultural production than MHHs. Lower total production leads to smaller per capita incomes. Lack of access to credit to hire oxen or labour results in women focussing on informal income generating activities which in turn reduces food output. Using examples drawn from Tanzania, Malawi and Zambia it is noted that FHHs plant a higher proportion of food crops than MHHs (e.g. maize, beans, cassava and vegetables) and experience particularly high labour demands from May to July for bird scaring, maize harvesting and shelling. Fewer FHHs own oxen and the costs involved in hiring oxen and labour result in reductions in the acreage planted and the quantity of seeds and fertilizer purchased. FHHs also have less contact with extension workers. Using multiple regression the key variable influencing variation in total farm production was total hectareage, followed by total operating cost. It is argued that general

agricultural policy prescriptions and policies do not adequately address the needs of FHHs and other low resource households.

35. Economic Commission for Africa. *Role of Technology in Small Farmers' Productivity in Africa*. Addis Ababa: United Nations, 1989.

COUNTRY: Africa

The paper examines technologies which can easily be maintained, are socially acceptable and have a low cost. Other practices which could increase productivity are explored (e.g. alley cropping). The importance of focussing on the use of technology by women is acknowledged. Among the technologies described in some detail are hand tools, human-powered technologies for crop processing etc., crop storage, motor driven machinery, cropping and fertilizing methods, water, animal traction, transport technologies, fuelwood and other energy sources. The socio-economic aspects of technology are also discussed (i.e. traditions of land tenure; access to capital or credit; pricing policies and technology policies). The main reasons for under-utilisation of oxen as draught animals are the lack of tradition of animal husbandry and the prevalence of disease. The disadvantages of oxen (as opposed to other draught animals) are: difficulty to train; heavy grazing requirements and slow speed of work. With regard to cropping methods, it is suggested that intercropping of cash and subsistence crops would result in increased efficiency of women's weeding by raising the yields of both crops and in the possibility of women claiming rights to part of the income from the cash crops.

36. Evans, A. *Gender Issues in Rural Household Economics*. *IDS Bulletin* 22.a (1991): 51-59.

COUNTRY: General

A description is given of the SEMRY project in Northern Cameroon. The project objective was to mobilize family labour to produce rice as a cash crop. However, married women withheld their labour due to insufficient returns, preferring to work on sorghum cultivation over which they maintained control.

37. FAO. *The Role of Women in Agricultural Production*. *Women in Agriculture*. Rome: FAO, 1984.

COUNTRY: World (including Africa)

This paper is an introductory document to the series 'Women in Agriculture' initiated following the World Conference on Agrarian Reform and Rural Development (WCARRD). It discusses the role of women in production, processing, storage and marketing of food crops and livestock. The relationship between technological and social interventions in areas of extension training, information, credit, marketing and agrarian reform are considered, with a focus on the current and potential role of FAO assistance. The male bias of technical innovation (e.g. ploughing) is recognized as increasing male productivity with a concomitant increase in women's workload (e.g. weeding). However, male migration has increased women's participation in ploughing in Swaziland, for example, whereas in general the constraints on women's time and cost of hiring draught power have resulted in reduced areas planted for maize, and decreasing yields due to poor land preparation and late ploughing.

Factors which influence women's roles in agriculture are summarized as 1) seasonality, 2) stage in family life cycle, 3) the presence or absence of men, 4) socio-economic status, 5) penetration of the market economy. The paper concludes that ownership of land, water and other resources are of fundamental importance. Examples are drawn from Swaziland, Malawi, Rwanda, Sierra Leone, Zaire, Gambia, Kenya, Upper Volta.

- 38. —. *Women and Population in Agricultural and Rural Development in Sub-Saharan Africa. Women in Agricultural Development No. 15*. Rome: FAO, 1991.**

COUNTRY: Lesotho, Sierra Leone, Tanzania, Zimbabwe, Botswana, Ghana

Using country studies, and the smallholder subsistence agricultural household as the basic functional unit, the paper provides a comparative analysis of the cultural, economic and technological aspects of women's reproductive and productive roles. The conditions affecting women's roles are analyzed to increase conceptual and empirical understanding of the relationship between women's dual roles. The paper discusses women's replacement of yams by cassava in Ghana due to labour shortages, and difficulty in accessing draught animal power (oxen) in Botswana due to their lack of strength and/or lack of cash to hire animals and labour which lead to delays in land preparation. The multiple roles of livestock are also described, being perceived as sources of traction, food and wealth. The high labour demands placed on women coupled with low levels of autonomy are seen to be linked with reproductive decisions (i.e. high levels of fertility are seen as a coping strategy). Children provide status, ensure women's access to land, further the family and lineage interests, and provide labour to ensure sufficient staple food production. It is suggested that male migration leads to changing farming patterns, to less labour intensive crops and the confinement of women to the subsistence sector. Empirical data are provided on the division of family labour in agricultural tasks and by gender in both agricultural and household tasks. The paper concludes that the reproductive role of women should be seen as an important and practical component of food production.

- 39. Fapohunda, E. R. *Female and Male Work Profiles*. Oppong, C., Editor. *Female and Male in West Africa*. London: George Allen & Unwin, 1983. Chapter 2.**

COUNTRY: West Africa

The chapter describes general male and female lifetime work commitments and the gendered distribution of work by occupation. Consideration is given to both historical and geographical variations in women's rights to land and the control of produce. Differences between the recorded number of men employed in agriculture in each country is contrasted with women's substantial but economically invisible role in agricultural production.

- 40. Fortmann, L. *Economic Status and Women's Participation in Agriculture: A Botswana Case Study*. *Rural Sociology* 49.3 (1984): 452-464.**

COUNTRY: Botswana

The paper uses household data from 12 representative sites to show that differences in agricultural practices and extension contact of male- and female-headed households largely disappear when economic stratum is controlled. There appear to be greater similarities

between farmers within the same economic stratum than between farmers of the same gender in different strata. The agricultural production system is described in terms of land, draught power and labour. Timeliness is a critical factor and access to male labour (for ploughing) is important. Clear economic and social strata are identified. Cattle ownership is important for both practical and socio-economic reasons but it would appear economic stratification is more important than the gender of the household head in determining whether the household ploughs, although it is questioned as to whether it is the controlling variable in all aspects of production. It is concluded that female farmers generally differ from male farmers in terms of access to resources but when access is similar so is behaviour on the part of the farmers. It is recognized that consideration of gender is important in designing programmes and policies as women generally have a lower legal status but it is also important to recognize the heterogeneity of female-headed households in terms of class. Class may have a greater effect on behaviour than gender.

41. **Gladwin, C. H. Fertilizer Subsidy Removal Programs and their Potential Impacts on Women Farmers in Malawi and Cameroon. Gladwin, C. H., Editor. *Structural Adjustment and African Women Farmers*. Gainesville: University of Florida Press, 1991. Chapter 8.**

COUNTRY: Malawi, Cameroon

The effect of fertilizer subsidy removal programmes in both countries is assessed in terms of their potential impact on women farmers. Gender differentiation occurs in crop production with women producing maize, the subsistence crop, whilst men produce cash crops - tobacco and hybrid maize in Malawi and cocoa in Cameroon. Information is given on gender differentiation in fertilizer use in Malawi and Cameroon. Malawian women's use of credit through membership of credit clubs is described, as is the possibility of transferring the model to Cameroon.

42. **Goheen, M. The Ideology and Political Economy of Gender: Women and Land in Nso, Cameroon. Gladwin, C. H., Editor. *Structural Adjustment and African Women Farmers*. Gainesville: University of Florida Press, 1991. Chapter 10.**

COUNTRY: Cameroon (Northwest Province)

Although prices for agricultural products have increased, this is not reflected in rural household incomes due to accompanying increased costs. Women have been worst affected by the economic crisis as a result of their dual role within the household. The paper explores the reason for women's lack of inclusion in policy discussions and the failure to consider their interests, particularly in relation to access to land. The market economy is leading to increasing feminization of poverty and rural stratification. There have been concurrent decreases in women's access to land and education, and increased demands on their labour and income: A clearly defined division of labour and responsibilities exists within the household, with women having responsibility for household subsistence, and men for cash crops. However, women's usufruct land rights by customary tenure have become increasingly insecure. Women own crops rather than fields, therefore, they rarely apply for, or gain, land grants. As a result women from poorer households only have access to land that is located further from the households.

43. ---. **Land and the Household Economy: Women Farmers of the Grassfields Today.** Davison, J., Editor. *Agriculture, Women and Land.* Boulder, USA: Westview Press, 1988. Chapter 5.

COUNTRY: Cameroon (Northwest Province)

CROPS: Maize & beans, Irish potatoes, vegetables and tree crops

The problem of women's access to land and capital is discussed through an analysis of Nso economy and gender relations. The discussion is based on quantitative data from a survey of 72 households in eight villages in 1981, supplemented by information obtained over a two year period. Analysis is largely from the perspective of the household economy which includes land and labour allocations, income distribution etc. Women are the primary producers, growing over 90% of household food requirements. However, they do not control important production resources (e.g. land). The author describes changes occurring over a period of 40 years illustrating increases in labour requirements occurring in conjunction with the loss of women's traditionally secure usufructuary rights through the institutionalization of individual land titles and lack of access to credit. Information is provided for the farming system; size of women's plots and their distance from the residential compound; agricultural cycle and particularly, labour allocation. Issues of timeliness are discussed, as are adaptations occurring over time as a result of increased labour demands. The quantity of labour exchange has expanded considerably and the formation of women's cooperative groups at times of peak labour requirements are now considered essential for breaking seasonal bottlenecks (e.g. preparing fields for planting before the first rains in March, and at harvest). With regard to timing of agricultural processes, in some instances women may not begin harvesting maize until the landlord's permission has been obtained.

44. **Goody, J. Bridewealth and Dowry in Africa and Eurasia.** Goody, J., and Tambiah, S. *Bridewealth and Dowry.* Cambridge Papers in Social Anthropology No. 7. London: Cambridge University Press, 1973. 1-58.

COUNTRY: Sub-Saharan Africa (various)

Using examples from a number of countries in Sub-Saharan Africa, the author discusses the role of livestock in dowry and bride-wealth systems. The relationship between marriage systems, structure of social groups and women's role in agricultural production is considered. Bridewealth appears most frequently in societies where women make a major contribution to agriculture.

45. **Grundfest Schoepf, B., and C. Schoepf. Land, Gender, and Food Security in Eastern Kivu, Zaire.** Davison, J., Editor. *Agriculture, Women, and Land: The African Experience.* Boulder, USA: Westview Press, 1988. Chapter 6.

COUNTRY: Zaire (Eastern Kivu Region)

CROPS: Beans, beer bananas, manioc, maize, sorghum, tea, coffee, pyrethrum, quinine.

The chapter calls attention to linkages between the effects of the national political economy and efforts of peasant women to produce food crops. It is suggested that women's status in the family and community is the key to their ability to contribute to and benefit from increased production efforts. Women do not have direct access to land but contribute the greatest input of labour to all but beer banana plots. Labour requirements have increased with the introduction of continuous cropping systems with two or three crops per year. Women carry out

planting, hoeing, weeding and harvesting operations. This heavy work load has serious consequences for the health and nutrition of both women and children. Some produce may be sold by women (sometimes secretly) who retain control of their cash resources. The problematic introduction of soybeans is also described. Women's main requirements were for higher bean yields, better access to improved hand tools, better storage methods and more land for cultivation. The introduction of cash crops has resulted in increasing marginalization of plots for food crops in terms of size and geographical location. Women may gain access to land for food production through plantation work. Aspects of decision making are described: women have a high level of autonomy regarding food crop production but decisions about land allocation are made by men. It is noted that women are able to organize defence of their interests (e.g. a tax revolt by Tembo women). It is also noted that women's subordination is variable by ethnic group and socio-economic status.

46. Guyer, J. I. *Family and Farm in Southern Cameroon*. Boston: Boston University, African Studies Centre, 1984.

COUNTRY: Cameroon (Southern Region)

CROPS: Melon seed, cocoyam, plantain, cassava, groundnuts, maize, vegetables, yams, sweet potatoes.

A study of Beti women. The right and obligation to work their farms is acquired through the descent and marriage system. Women take an active part in land disputes. Widows may farm their husband's land in order to prevent encroachment from male kin.

47. Guyer, J. I., and O. Ikowu. *Women's Agricultural Work in a Multimodal Rural Economy: Ibarapa District, Oyo State, Nigeria*. Gladwin, C. H., Editor. *Structural Adjustment and African Women Farmers*. Gainesville: University of Florida Press, 1991. Chapter 11.

COUNTRY: Nigeria (Oyo State)

The paper discusses the social basis and dynamics of the multimodality developed during the 1980s. Two interpretative frameworks, populism and class analysis, are contrasted (i.e. analysis of diversity and differentiation as affected by production). A key issue is dramatically changing capital/labour cost ratios. During the 1960s agriculture was based on male smallholder farming with inputs by women at critical periods (e.g. harvesting and processing). By the 1980s women were forming a new category of farmers. By 1988 69% of women claimed to have their own farms averaging just under 2 acres in size. Increases in male smallholders acreage and in mechanization has led to an overall decline in women's routine obligations (e.g. head carrying), but an associated increase in their peak period activities (e.g. harvesting), for which they are remunerated. Women's farming appeared to be initiated by increased availability of transportation and was carried out in conjunction with other activities. Gradually farm sizes have expanded as has crop diversity. Cassava production has decreased from 79% to 61% of farm area. Women now see farming as a viable occupation although they are more dependent on commercial inputs than are men. 42% of women's land is cleared by tractor and 57% by hired labour. Hired labour is also utilized for weeding. The question of the sustainability of women's independent farming under conditions of increased costs of inputs and reduced availability of tractors is discussed. Women also work as wage labour for male farmers during the harvest.

48. **Haswell, M. Population and Change in a Gambian Rural Community, 1947-1987. Haswell, M., and Hunt, D., Edtiors. *Rural Households in Emerging Societies*. Oxford: Berg Publishers Limited, 1991. Chapter 8.**

COUNTRY: Gambia (Middle River Area)

CROPS: Groundnuts, millet, sorghum, maize, rice, Degitaria exilis

Using a baseline of empirical evidence, the author examines changes in household roles brought about through technological and environmental change. Pre-1950 women were responsible for rice production which comprised 80% of the total grain supply. As a result the quantity of available female labour determined the choice of crops and food supply. Peak periods of labour activity occurred after the first rains and during weeding (i.e. June to October). Problems of timeliness were exacerbated by high levels of disease transmission, marginal food supplies and reduced time for child care, making this a period of high infant mortality. Increasing availability of land for swamp rice production (higher yield but single cropping) initiated a shift from sharp gender divisions of labour to more cooperative production, with men assisting women during the traditional labour bottleneck period of transplanting. The 1970s saw the introduction of ox-ploughing to replace hand hoe agriculture, which led to neglect of food crops as draught power was unavailable to women. During the 1950s women worked in 'kitchen' groups to overcome the problems of peak labour requirements associated with upland rice production. They also cultivated communal farms as a hedge against famine. Expanding demands for women's labour brought about by increased school attendance among children, decreasing household size etc. has resulted in a decline in work groups and, therefore, difficulty in obtaining reciprocal labour at peak times. A further time constraint is the necessity of hand-pounding. During the 1980s female cooperation shifted into the formation of pressure groups to demand access to grain mills and generators.

49. **Himonga, C. N., and M. L. Munachanga. Rural Women's Access to Agricultural Land in Settlement Schemes in Zambia: Law, practice and Socio-Economic Constraints. Third World Legal Studies 1991. *Realizing the Rights of Women in Development Processes: Women's Legal Entitlement to Agricultural Development and Financial Assistance*. Indiana: International Third World Legal Studies Association and the Valparaiso University School of Law, 1991.**

COUNTRY: Zambia

The paper illustrates the way in which administrative practices, social and cultural value systems and gender relations undermine women's access to and control over land and factors of production.

50. **Hocking, C. *The Impact of Mobile Ox-Ploughing Courses for Women: A Study in Kaoma East and in Areas Surrounding the Lui River Valley, Western Province, Zambia*. Diss. : University of Newcastle upon Tyne, 1991.**

COUNTRY: Zambia (Western Province)

The paper provides details of the impact of training women in the use of draught animal power. Women are involved in agricultural production on both their own and household fields but have difficulty in developing farming practices utilizing draught animal power. Even when women own livestock, their lack of knowledge of animal traction leads them to rely on hired labour. It is

argued that if women learn to plough, crop productivity including cash crop production would increase, thus increasing living standards. Information is provided regarding course participants, limitations to and benefits of the course, and primary, secondary and tertiary levels of impact. Although the background of participants influenced the level of impact, it generally appeared to be limited to aspects such as increased independence, self-assurance and decision making, although some breakdown in the traditional division of labour also occurred. Women able to plough benefitted from increased production through expansion of the fields cultivated and increased speed and timeliness of land preparation and in general economic benefits outweighed the disadvantages of an increased work load. Drudgery involved in land preparation was also reduced. At the tertiary level, ownership of oxen was seen to be the major determinant of timely implementation, confidence in yoking oxen and marital status were also influential although some regional variation was noted. In Kaoma East a general shortage of oxen was reflected in high costs of hiring. Oxen for sale were generally in poor condition and, therefore, farmers were reluctant to purchase them. The main factors limiting the benefits from draught animal power were identified as poor marketing infrastructure, late returns from sale of crops, transport to depots and difficulty in repairing equipment.

- 51. Jabbar, M. A. Research on Cow Traction in Africa: Some Lessons to be Learned. *World Animal Review* .74-75 (1993): 58-63.**

COUNTRY: Ethiopia

The paper reviews the research of the International Livestock Centre for Africa (ILCA) on single-ox plough and cow traction in Ethiopia with a view to assessing its value for other areas of Sub-Saharan Africa where animal traction is well established. It is suggested that the use of single oxen would assist poor farmers to improve the timeliness of planting, whilst the introduction of cow traction would reduce feed competition between draught and dairy animals. Claims that cow traction is more profitable than the use of paired or single oxen are refuted by analysis of experiments in South East Asia where long-term problems of fertility and milk production have been identified. The paper recommends the use of the single-ox plough where the feed situation is adequate.

- 52. Jackson, C. *Change and Rural Hausa Women: A Study in Kura and Rano Districts, Northern Nigeria*. Diss. Wye College: University of London, 1981.**

COUNTRY: Nigeria (Kano State)

CROPS: Millet, guineacorn, groundnuts, beans, maize, vegetables

An historical overview of land inheritance and tenure is provided with particular emphasis on divergences between customary and Islamic law, regarding female inheritance and property division. Customarily few women owned land, and during the colonial period women were allocated decreasing quantities of land by their husbands. Cultivation of private land became more intensive through intercropping, manuring and weeding increased labour input per unit, however total labour demand decreased resulting in a reduced agricultural work load for large parts of the year. In the case of Muslim women this sometimes led to an increase in wife seclusion. Internal differentiations were greater for pagan women due to variations in access to the means of production. Reallocation of irrigated land led to a further loss of women's land.

53. **Jones, A. Socio-economic Constraints to the Use of Animal Traction for Rainfed Rice Production in The Gambia.** Starkey, P., and Faye, A., Editors. *Animal Traction for Agricultural Development*. Ede-Wageningen, The Netherlands: CTA, 1990.

COUNTRY: The Gambia (North Bank and Western Divisions) CROPS: Rice, groundnuts, vegetables, millet, sorghum

The paper provides a description of the rice research programme. Land belongs to the lineage of the household head, who also allocates resources. Although household heads have responsibility for ensuring sufficient staple food supplies for the household, all working household members are obliged to contribute labour to food crop production. Strong gender divisions of labour between crops exist, with men working on millet and sorghum, and women on rice. In addition to rice production, women work as hired labourers or produce crops for sale (e.g. groundnuts and vegetables). Male control and utilisation of animal draught power and equipment reflects the historical process of farm mechanization. Because women have limited access to animal traction they tend to concentrate on cash crop production and use purchased inputs. Seventy five percent of rice cultivating households own draught animals and equipment (e.g. Sine Hoes and Super Eco seeders) but these are only utilized on the uplands for millet, sorghum and upland rice, where they halve labour requirements. Where draught animal power is not utilized, male labour is a major production constraint. The introduction of mechanization in other areas of The Gambia resulted in a decrease in women's access to rice production although labour has been allocated to the production of upland cash crops. Major labour bottlenecks occur during August and September, consequentially women's work groups have formed on the basis of reciprocal or hired labour, although some planted fields usually remain unweeded. The designation of rice as a food crop suggests that women are unlikely to invest capital in a crop from which no monetary reward will be obtained, therefore, technological change is likely to depend on the willingness of men to invest in rice cultivation.

54. **Jones, C. W. Intra-Household Bargaining in Response to the Introduction of New Crops: A Case Study from North Cameroon.** Moock, J. L., Editor. *Understanding Africa's Rural Households and Farming Systems*. Boulder, USA: Westview Press, 1986. Chapter 6.

COUNTRY: Cameroon

CROPS: Sorghum (red and dongologna), irrigated rice

The chapter explores intra-household bargaining in response to the introduction of irrigated rice cultivation in two villages of North Cameroon. Traditional land rights and labour allocation are discussed showing the relatively high level of autonomy possessed by women. Women may be allocated land by descent groups and may spend 95% of their labouring time cultivating their own fields. Most married women also possess their own granary. Sorghum is grown as a subsistence crop by men and women, with the women's crop being eaten first. There is no collective cultivation and, even when land is registered in a woman's name, cultivation is carried out by the conjugal household, with the husband retaining control of the income. This leads to intra-household conflict. Both genders have bargaining power: women may withdraw their labour, cease food preparation, or work as hired labour. Men resort to violence. Data is given regarding rates of pay for hired labour and analyses demonstrate that compensation for foregone sorghum production compensation is below the market rate for hired labour. Consideration of the opportunity cost of labour raises the issue of timeliness. The main problem occurs between rice transplanting, sorghum planting and sorghum weeding.

However women usually obtain a cash benefit from participating in rice cultivation. This leads on to a comparison of allocative efficiency between married and independent women. Reasons for differences in labour allocation may be the number of children, greater price variability for sorghum and differential access to land. These are expressed through intra-household bargaining processes, with compensation being a function of the labour input.

55. **Kaberry, P. M. *Women of the Grassfields: A Study of the Economic Position of Women in Bamenda, British Cameroons*. London: Her Majesty's Stationery Office, 1952.**

COUNTRY: Cameroon (Bamenda Region)

CROPS: Maize, finger millet, guinea corn, maize, sweet potatoes, bambarra nuts

An ethnographic study of the economic and social position of rural women in Cameroon. Women gain access to land in various ways. They may be granted usufruct rights by lineage heads entitling them to control over the crops. Other methods of obtaining land include loans between women and mothers providing daughters with small areas of land which, even on marriage into another community, need not be relinquished. Women also acquire usufruct rights to land at marriage from the lineage heads of both parents. When a woman no longer wishes to cultivate land she has certain transfer rights. Women who are widowed or leave their husbands are granted use rights to plots of land from their parents' lineage. Minor variations to the above were noted among other ethnic groups. Cultivation is by use of a shorthanded hoe. Women undertake most agricultural activities other than land clearance and the extent to which they receive assistance from men varies by ethnic group. The main labour demands occur from mid-February to mid-March. *Rizga* is the most physically demanding crop, and yams the least. Men assist with millet harvesting and cutting guinea corn. Practical assistance may also be given as companionship or during ill health. Detailed information is given regarding size and location of land holdings (social status affecting the location rather than the quantity of land available to women); methods of cultivation; the acreage and labour time devoted to each crop; rotation of crops; calendar of main agricultural activities; yields per crop, and household budgets.

56. **Karanja, P. W. *Women's Land Ownership in Kenya*. Third World Legal Studies 1991. *Realizing the Rights of Women in Development Processes: Women's Legal Entitlement to Agricultural Development and Financial Assistance*. Indiana: International Third World Legal Studies Association and the Valparaiso University School of Law, 1991.**

COUNTRY: Kenya

The paper gives a historical overview of women's land rights and the marginalization of their labour in food crop production following the introduction of the Swynnerton Plan and increasing cash crop production. Women's loss of socio-economic power has led to a change in their former position of self-sufficiency to one of dependency.

57. **Kitching, G. *Class and Economic Change in Kenya: The Making of an African Petite-Bourgeoisie*. London: Yale University Press, 1980.**

COUNTRY: Kenya

The book discusses the impact of colonialism and imperialism on the internal structure of Kenyan economy and society, whilst also contributing to the development of Marxist theory. The changing nature of agricultural production and organisation of labour is described from an 'ideal typical' pattern before colonial rule to the 'agrarian revolution' from 1952-1970. Regional differences in adaptation to change and differentiation by class and gender are described. It is suggested that traditional patterns of differentiation which had been operating among Africans in Kenya were little altered by colonialism although the labour market changed substantially and off-farm incomes became increasingly important.

58. **Kofie Daddieh, C. *Production and Reproduction: Women and Agricultural Resurgence in Sub-Saharan Africa*. Parpart, J. L., Editor. *Women and Development in Africa: Comparative Perspectives*. Dalhousie African Series 7. Lanham, USA: University Press of America, 1989. Chapter 9.**

COUNTRY: Sub-Saharan Africa

The chapter aims to synthesize literature on women's historical contribution to agriculture in Africa. Emphasis is placed on their labour constraints and the ways in which these are overcome. Agricultural activities generally carried out by women are described (e.g. planting, weeding, harvesting etc.), as are common characteristics of farming systems (e.g. land tenure, hand-tool cultivation etc). Cross-gender cooperation is also discussed. The generally high input of women's labour, both visible and invisible, into agricultural production is acknowledged with specific data provided for Burkina Faso. Women's increasing assistance with cash crop production is having a detrimental effect on labour inputs for their own land. Responses to such pressures include resilience and resistance. Different methods of organisation are described ranging from the status quo response to confrontation. The former includes selection of hunger-resistant and labour-saving crops such as cassava and maize, superseding other foodstuffs. In contrast, attempts by women to consciously compete in traditionally male economic areas are also described. These attempts are closely linked to communities in West Africa where women have entered directly into cash crop production, although such action is limited to women of already high social or economic status. In conclusion it is suggested that the deteriorating position of women within agriculture goes beyond issues of accessible technology, to those of social and political gender relations (i.e. access to land, labour and credit together with an improvement in the focus of agricultural research and extension services).

59. **Kunze, W., and H. Loos. Inter-Relationship Between Male Labour Shortage and Animal Draught Power: A Case Study from Botswana. Fielding, D., and Pearson, R. A., Editors. *Donkeys, Mules and Horses in Tropical Agricultural Development*. Edinburgh, 3 Sept. 1990. Edinburgh: University of Edinburgh, 1991.**

COUNTRY: Botswana (North-Eastern Region)

CROPS: Maize, sorghum, pumpkin, watermelon, grain and sugar sorghum, cowpeas, groundnuts, millet.

A detailed report of human resources, cultivation practices, extension approach and activities, and the socio-economy in an area of intensive cultivation. Studies and field tests were conducted to identify problems related to draught animal power and develop recommendations. Information is provided on types of implements for ploughing and post-ploughing operations, harnessing and yoking, and on extension approach and activities. Cultivation occurs according to flooding patterns, although some land is protected from uncontrollable flooding. Gender divisions of labour in agriculture occur with fencing, bund construction and ploughing and planting carried out by men, while women are responsible for all post-planting operations. Shortages of male labour and draught power result in favourable planting conditions often being missed. Ownership of draught animal power is inequitable and utilized inefficiently due to six to eight animals being used per span on mouldboard ploughs. Many farmers, particularly FHHs rely on hired traction. Government subsidies on ploughs etc. have been introduced to boost arable farming although uptake appears low. The traditional system of ploughing continues despite increasing male out-migration, with the result that the remaining men are facing an increasing demand. Consequently men are less interested in arable crop production and are reluctant to fulfill their customary ploughing and land preparation obligations. As a result a large proportion of women are only able to meet their subsistence level of production. It is concluded that shortage of male labour is the major problem this leads many resource poor farmers, particularly women, into a 'vicious circle of labour shortage'. Training courses are being developed to encourage the use of donkeys by women. Cattle rearing is exclusively the task of men, with many households also owning donkeys. Cattle have multiple uses, including draught power, but since the drought (1981-1987) the use of donkeys has increased. It is suggested that the social organisation of ploughing might be altered to incorporate staggered planting dates avoiding labour bottlenecks in post planting operations.

60. **Kurwijila, R. V. *The Role of Appropriate Technology in Reducing Women's Workload in Agricultural Activities in Tanzania*. Office of Women in International Development Working Paper 208 . Michigan: Michigan State University, 1990.**

COUNTRY: Tanzania (Morogoro Region)

Data are provided for divisions of labour by gender and task for Africa; and levels of awareness, availability and uptake of appropriate technology among women in Morogoro. Women's activities in agricultural production are planting, weeding, manuring, harvesting and handling of produce from both subsistence and cash crops. Agricultural mechanization has formed an important part of Government agricultural policy, resulting in reduced workloads for men. 40 women were interviewed regarding the lack of uptake of this technology. While 12% of women lived in villages where draught animal power (oxen) was available only 7% used the technology. Non-use was attributed to lack of strength and cultural taboos. However uptake of dehulling/milling machines and coconut graters was 58% and 100% respectively. Reasons for

lack of uptake of this technology included lack of availability, lack of capital (the most frequent response), gender bias in dissemination of technology, and poor design of technology.

61. Leach, M. Locating Gendered Experience: An Anthropologist's View from a Sierra Leonean Village. *IDS Bulletin* 22.1 (1991): 44-59.

COUNTRY: Sierra Leone (Eastern Region)

CROPS: Upland rice, condiment vegetables, hunger foods e.g. cassava, sorghum.

The paper describes on gendered access to resource flows in one village, especially women and changes due to increased commercialization. Women obtain land and support through the husband's lineage whilst occasionally acquiring land from their natal kin. Separate enterprises for co-wives are extremely important as vegetable and sauce intercropping ensures both private income and supplies for cooking. Resource flows occur through patron client relationships and reciprocal assistance between kin and friends, women being particularly reliant on the latter. Single women are potentially vulnerable as they lack male labour for land clearance but these problems may be overcome by contractual arrangements or by joining with another farm-household on an annual basis. Gender differentiated groups may form work groups (e.g. men clear rice and cocoa farms, while women may join together for weeding or form rotating credit associations). The increasing influence of commercial cash cropping has resulted in renegotiations of the conjugal contract: wives must assist with harvesting and processing of cocoa and coffee production for little reward and carry out more peak season rice production activities. This has had a negative effect on their independent vegetable gardening and swamp work. In contrast men are no longer obliged to provide assistance to their wives. Age and stage in the social cycle are significant factors in labour commitments, with young wives having the greatest demands made on their time. Mature monogamous couples are most likely to pool resources. Ranking of co-wives is seen to be significant for access to resources and women married to younger men have a particularly strong position in terms of income allocation.

62. ---. Women's Crops in Women's Spaces: Gender Relations in Mende Rice Farming. Croll, E., and Parkin, D., Editors. *Bush Base: Forest Farm: Culture, Environment and Development*. London: Routledge, 1992. Chapter 5.

COUNTRY: Sierra Leone (Eastern Province)

The chapter explores the cultural understanding of the environment in relation to gender differences among the Mende, and demonstrates how changes in farming pattern alter the contexts through which gender relations are constructed. Information is provided on upland rice farming and swamp rice farming. Rice-farming households have become smaller, based on a, usually, polygynous conjugal unit. Additional kin or paid labour groups assist during peak periods. Gender based divisions of labour are related to the cultural construction of gender and the farming environment. Selection and clearing of space are male activities, with women taking over agricultural production with the start of the rains (i.e. broadcasting, ploughing, planting, weeding and scaring monkeys and birds). Only a small number of male farm-household heads actively participate in crop production. Young male kin, however assist with ploughing and other work. Female heads of household carry out all activities themselves but experience economic difficulties and tend to be among the poorest households. Sub-divisions of 'women's spaces' present a 'social map' of differences between women which may be annually reaffirmed or renegotiated. This occurs through allocation of independent space, often associated with age and marital status within the household. The multiple

interests of women are illustrated in the diversity of their cultivation patterns of crops for cooking for self and others, marketing, visiting etc. The social division of intercrop space reflects the social and economic organization of women's activities within the household and their outside interests. Detailed information is provided regarding women's intercrops and the variety of available options. In conclusion it is suggested that dynamic social maps may be a useful basis for planning development interventions.

- 63. Lele, U., and Agarwal, M. *Smallholder and Large-Scale Agriculture in Africa: Are There Tradeoffs Between Growth and Equity?* MADIA Discussion Paper 6 . Washington: World Bank, 1989. Determinants of Input Use on Small and Large Farms in Africa.**

COUNTRY: Africa

In evaluations of the reasons for lower productivity on small farms in Africa, shortages of labour are critical. Labour shortages are regarded as critical explanations of reduced productivity of small farms in Africa. Reference is made to reduced labour from children where schooling is widespread.

- 64. Liuma, L. L. *The Involvement of Women in Animal Power Utilization in Malawi.* Lilongwe, Malawi: Animal Power Utilization Project, FAO, 1989. UNDP-FAO MLW/86/002.**

COUNTRY: Malawi

The paper considers the a programme addressing the delivery of agricultural messages to women in the Northern and Central regions where oxen ownership is common. Difficulty was experienced in obtaining female extension staff, only partial dissemination of information was achieved and participation rates by women were low. In male-headed households there do not appear to be clear gender divisions of labour within agricultural production except where draught animal power is concerned. In FHHs women have autonomy in decision making and management but experience difficulty in obtaining access to agricultural services. Men dominate utilization of animals for ploughing, ridging and carting. Women's use of draught animal power is mainly limited to FHHs, although socio-cultural traditions frequently require these households to employ labourers to use oxdrawn implements if they do not have sons. The main way in which women can participate directly in draught animal power is by leading oxen pulling carts to transport farm inputs, produce, water, fuelwood and thatching grass. Where women use draught animal power they usually work in conjunction with male kin. Women also participate in collection of hire charges for carting, ridging and ploughing. Women often have difficulty in completing crop husbandry practices on time due to lack of access to free or hired labour. Main labour requirements are during land preparation, planting, weeding, harvesting, cotton spraying, ploughing and transporting produce. It is suggested that increased use of draught animal power for transportation of water and fuelwood would be of particular use for women. The following conclusion and recommendations are made for different sizes of land holding and for women. Ownership of draught animal power is not economical for small areas of land, although it can help with ease of transportation of produce, inputs, water and fuelwood. Ownership of oxcarts can also generate income through hire charges. It is suggested that formation of farm-groups would be beneficial for small land-holders for obtaining access to draught animal power, especially for women, training of women to use draught animal power, improved training of animals and, possibly, design of lighter implements. Pilot areas are identified for women's credit schemes.

65. **Lombe, M., C. Sikanyika, and A. N. Tembo. The Importance of Women's Participation in Animal Traction in Zambia. Starkey, P., Mwenya, E., and Stares, J. *The First Workshop of the Animal Traction Network for Eastern and Southern Africa*. Lusaka, Zambia, 18 Jan. 1992. Improving Animal Traction Technology . Wageningen, The Netherlands: Technical Centre for Agricultural and Rural Cooperation, 1994.**

COUNTRY: Zambia

The paper discusses the advantages and disadvantages experienced by women as a result of the introduction of animal traction technology. It is suggested that female ownership of draught animals and animal-drawn implements will allow production of more labour intensive crops which may improve nutrition and standards of living of rural women and their families. The need for appropriate animal traction technology is stressed. It is suggested, therefore, that women should be involved in design of equipment, be trained in handling and care of draught animals and be given access to credit facilities with which to purchase animals and implements. Oxenisation programmes in Northern Province are described, together with constraints causing women to fail to take-up animal draught power.

66. **Marshall, K., and M. Sizya. Women and Animal Traction in Mbeya Region of Tanzania: a Gender and Development Approach. Starkey, P., Mwenya, E., and Stares, J. *The First Workshop of the Animal Traction Network for Eastern and Southern Africa*. Lusaka, Zambia, 18 Jan. 1992. Improving Animal Traction Technology . Wageningen, The Netherlands: Technical Centre for Agricultural and Rural Cooperation, 1994.**

COUNTRY: Tanzania (Mbeya Region)

The paper outlines the attempts of the Mbeya Oxenization Project to promote animal traction from a gendered perspective. Animal traction is considered a male activity and, therefore, women have been marginalised from its utilisation. The project attempted to involve both male and female farmers. Misconceptions about women and animal traction are discussed, as are strategies for involving women in the use of animal traction through a gender and development approach. It is concluded that understanding of the local situation and existing power relations are important project considerations as the promotion of animal traction for women's crops and activities may be perceived as challenging traditional attitudes and values. It is suggested that the marginalisation of women from animal traction is more closely linked to shortcomings of development projects than to culture.

67. **McIntire, J., Bourzat, D., and Pingali, P. *Crop-Livestock Interaction in Sub-Saharan Africa*. Washington, D.C., USA: The World Bank, 1992. Chapter 4.**

COUNTRY: Sub-Saharan Africa

The book reviews crop-livestock relations by agroclimatic region throughout the subcontinent. The chapter considers the determinants of animal traction, its relations to soil fertility and crop residue management and competition for feed and other resources. Potential constraints to mechanization are considered to be farming intensity and market access, agroclimate, feed competition, rental markets as a substitute for ownership and inadequate research. These constraints are evaluated, indicating barriers to diffusion of mechanization and ways in which they might be overcome.

68. **Meena, R. The Impact of Structural Adjustment Programs on Rural Women in Tanzania. Gladwin, C. H., Editor. *Structural Adjustment and African Women Farmers*. Gainesville: University of Florida Press, 1991. Chapter 7.**

COUNTRY: Tanzania

Information is provided on women's crop production methods within a discussion of the problems associated with structural adjustment programmes. Women's agricultural tasks include land clearance, weeding, harvesting, storing, headloading and marketing. Little mechanized traction is available and women are limited to hand-hoe cultivation. They generally control production of food crops (e.g. vegetables, fruits, peas and beans). Cotton cash crop production has been heavily encouraged, resulting in a loss of time available to women for cultivation of food crops and their involvement with marketing of cotton appears to be correlated with loss of transportation.

69. **Mitchnik, D. A. *The Role of Women in Rural Zaire and Upper Volta: Improving Methods of Skill Acquisition*. Oxfam Working Paper 2 . Geneva: I.L.O., 1977.**

COUNTRY: Zaire, Burkina Faso

Within a discussion of basic need requirements and the exclusion of women from rural programmes. Information is provided on education, marriage and pregnancy and, more specifically on patterns of household work by age and gender. Survey information is provided on social and economic activities of rural families in Zaire and Burkina Faso. In Zaire women are largely responsible for the production of subsistence crops (manioc), spending 180-321 hours per year working the fields. Peak labour requirements occur during the rainy season for sowing. Women plant manioc, peanuts, maize, sweet potatoes, *vouandzou* and plantains, and are assisted by men with tree cutting and land clearance. Manioc production is considered a wholly female activity and no male labour is utilized. In Burkina Faso similar patterns were noted, however, men and women make largely equal contributions to agricultural production, with few gender specific activities. Women do, however, have their own plots on which they work for 1-2 hours per day. Vegetables and spices are produced for family consumption and sale and the income utilized by women. Agricultural extension and development projects have, due to a male orientation, generally increased the demands made on women's labour. Animal traction has been promoted and data are provided on the use of oxen. Animal traction has increased the area of land cultivated and although use of ploughs is a male activity, women's work in the fields has increased substantially for weeding, hoeing and harvesting. Innovations in food processing etc. have not generally been taken up by women, largely due to weaknesses in government planning and implementation. In contrast, in Zaire, women have been largely unaffected by changes and innovation in agriculture.

70. **Motlhankana, M. *Use of Draft Power in Kweneng, Kgatleng and Tutume Districts*. Gaborone, Botswana: Evaluation and Action Research Unit, Ministry of Agriculture, 1986.**

COUNTRY: Botswana

A report on the use of draught power initiated as a result of allegations of misuse of draught animals. 1500 interviews were carried out, 1000 respondents being women. The report gives

tabular information regarding the animals, their uses, length of time they were spanned for and the level of knowledge regarding the use of draught animals.

71. **Muchena, M. The Effect of Ox Sharing Arrangements on the Supply and Use of Draught Animals in the Communal Areas of Zimbabwe - Preliminary Findings. Cousins, B., Editor. *People, Land and Livestock*. Zimbabwe: Centre for Applied Social Sciences, University of Zimbabwe, 1989.**

COUNTRY: Zimbabwe (Buhera District)
CROPS: Maize, *mhunga*, groundnuts

The paper is a preliminary report of a 1989 study of the draught power situation in one communal area of Zimbabwe. It focusses specifically on the potential for efficient utilisation of available draught power through exchange markets and sharing arrangements. Information and data are provided regarding cattle and donkey ownership, land preparation methods and access to draught power. Attention is drawn to FHHs which frequently delay planting due to lack of access to draught power. This may reduce yields by 5-10% for every week's delay after the optimum planting date.

72. **Mukerjee, H. *A Study of Women and Agricultural Technologies Used in Food Production in Africa*. Rugby: Intermediate Technology Development Group, 1992.**

COUNTRY: Africa

The study provides a broad overview of the role of, and constraints upon, women farmers in meeting household subsistence requirements. A number of issues are discussed including the invisibility of women farmers, time and allocation constraints, the significance of FHHs and the case for technological assistance for women farmers by development agencies. The paper concludes with recommendations for incorporation of gender and technology issues into ITDG.

73. **Mustapha, A. R. *Stress, Adaptation and Resilience in Rural Kano*. SSRIC/CODESRIA Workshop on African Agriculture, Dakar, Senegal, 18 Jan. 1992. Unpublished.**

COUNTRY: Nigeria (Kano Region)
CROPS: Sorghum, millet, maize, cowpeas, rice, onions, pepper, sugar-cane.

Focussing on agrarian change following increasing population pressure, the paper considers the case of a zone close to the town of Rogo and reasons for the breakdown of traditional institutions supporting environmental management. Problems of increasing variability of rainfall, changes in soil fertility, deforestation, changes in livestock and grazing management and major economic and legislative changes have led to social stress in the form of land shortages. Declining security of access to land, particularly among poorer farmers, has led to a tendency among younger women (from middle and wealthier households) to claim inherited land. This may be used to increase women's bargaining power for other forms of economic support although seclusion prevents women engaging directly in farming. The collapse of traditional rotating credit groups has reduced the ability of women to mobilize capital although men are increasingly relying on their wives for input and consumption credit. The results of this

are debatable as women's control over their own incomes has diminished although their ability to make decisions within the household may increase. It is concluded that economic stresses are highly influential in undermining the situation of poorer farmers. Although institutional adaptability is acknowledged, institutional regression and the rise of individual survival strategies to replace traditional management techniques illustrate community vulnerability.

- 74. Mwape, F. Traditional Cropping Systems in Northern Province, Zambia. *Proceedings of the Symposium on the Sustainability of Agricultural Production Systems in Sub-Saharan Africa*. Aas, Norway, 4 Sept. 1989. NORAGRIC Occasional Papers Series C Development and Environment No. 4. Norway: NORAGRIC, 1989.**

COUNTRY: Zambia (Northern Province)

CROPS: Cassava, finger millet, sorghum, maize, groundnuts.

The paper assesses factors and requirements of 'traditional' farms with regard to agricultural development. Information is provided on the broad characteristics of the main types of farms and cropping patterns. The changes in cropping patterns from 1980-1983 indicate that settled agriculture for hybrid maize production is replacing shifting cultivation. The introduction of oxen has been accompanied by problems of acceptability. The quantity of family labour available, particularly at peak periods (January to April) limits the area cultivated. Other labour bottlenecks occur during maize planting (November) and millet planting (January). Extra labour may be obtained through reciprocal arrangements or hired and paid in kind or by cash. The need for suitable technology to ease labour shortfalls is noted.

- 75. Nagy, J. G., H. W. Ohm, and S. Sawadogo. Burkina Faso: A Case Study of the Purdue University Farming Systems Project. Feldstein, H. S., and Poats, S. V., Editors. *Working Together: Gender Analysis in Agriculture*. USA: Kumarian Press Inc., 1989. Part 1, Chapter 4.**

COUNTRY: Burkina Faso (Central Plateau)

CROPS: Peanuts, bambara nuts, cowpeas, sorghum, millet, okra, maize

The breakdown of gender divisions of labour within agriculture is described. There appears to be little clear differentiation in terms of activities, although women do not participate in animal traction activities. Women do not have inheritance rights to land but obtain usufructuary rights through their husbands, however autonomy of labour is seen to be linked to age and household structure. Women may be allocated land annually by household heads and male kin, but is accompanied by a right to demand that women labour on other fields (work on collective fields taking priority over private fields). Older wives in polygynous households have greater autonomy in the distribution of their own labour between communal and individual fields. Peak labour requirements occur in June-July when the first weeding of sorghum and millet coincides with planting maize, rice and groundnuts. Given sufficient land, women generally cultivate a plot of sorghum or millet; one of peanuts or bambara nuts; along with okra, maize etc. Small amounts of produce may be sold and the income retained by women, but the produce obtained must be sufficient to feed the women and children in the household for at least one meal per day through the dry season.

76. Netting, R. Mc. *Smallholders, Householders: Farm Families and the Ecology of Intensive, Sustainable Agriculture*. Stanford: Stanford University Press, 1993.

COUNTRY: Nigeria (Kofyar Region)
CROPS: Sorghum, millet, yams

Information is given on labour input by gender in several African countries for both intensive and extensive agricultural systems. Examples of labour bottlenecks are found within a number of agricultural systems (e.g. weeding within Iban shifting cultivation; planting of millet and sorghum after the first rains). Harvesting and storing of early millet creates another labour bottleneck. The Kofyar have a relatively equal division of labour although some gender differentiation by task occurs (i.e. men do the majority of the weeding and transplanting whilst women play an important role in ridging and mounding). The introduction of cash crops has increased labour demands although this has partially been scheduled between traditional labour peaks of the millet/sorghum labour cycle. Gender divisions of labour become less differentiated during labour bottlenecks (e.g. planting after the first rains) although accumulated specialized knowledge (e.g. wet rice planting in Gambia), may perpetuate some gender divisions of labour. Women's labour input into family fields is not compulsory and a quarter of their agricultural labour time may be spent on their own fields. The importance of women's food production may result in the granting of usufruct land rights and time-off from the homestead farm and household exchange-labour groups.

77. Njiku, E. T. *Agricultural Mechanization and Gender Issues in Tanzania*. Simalenga, T. E., Kayombo, B., and Hatibu, N., Editors. *Proceedings of Tanzania Society of Agricultural Engineers (T.S.A.E. Annual Scientific Conference)*. Arusha, 17 Sept. 1991. *Proceedings of TSAE 4. : Tanzania Society of Agricultural Engineers, 1991.*

COUNTRY: Tanzania

The article considers 'appropriate' technology for women and the issues and strategies by which to involve women in agricultural mechanization. Since technology is inter-related with the socio-economic and political environment in which it is applied, it is important to consider these in the planning process. Economic considerations include cost/benefit analyses, purchasing power and trade-offs between cost in time vis a vis initial, operational, maintenance and replacement. Infrastructural support is also influential (e.g. energy/power source/roads, transportation methods and marketing systems). The funding of agricultural mechanization technologies may adversely affect women in terms of access to credit or funds with which to purchase equipment. Strategies for involving women are discussed, including women's organizations, skills and training facilities, and government policies and initiatives. Intra-household decision making processes are of critical importance for assessing potential constraints to access and control of equipment by women. Examples are provided of agricultural innovation and their impact on women and it is suggested that women are most likely to utilize technologies that will both improve family living conditions and lead to income generation (e.g. water pulleys, pumps, conservation, transportation and energy-saving equipment). Agricultural equipment likely to be taken-up by women includes tractors, mowers, threshers and food processing equipment.

78. **Okere, L. C. *The Anthropology of Food in Rural Igboland, Nigeria: Socioeconomic and Cultural Aspects of Food and Food Habit in Rural Igboland.* Lanham, M.D.: University Press of America Inc., 1983.**

COUNTRY: Nigeria (Igboland)

CROPS: Yam, cassava, cocoyam, plantains

The article describes a system of intensive agricultural production in South East Nigeria where women may gain access to land through tenancy agreements which are given for the purpose of growing food crops. While hoe cultivation is practiced and labour intensive yam cultivation is being replaced by cassava, in densely populated areas, women mulch compound plots with manure and household waste. The farming calendar for annual food crops is described, detailing gender divisions of labour on a monthly basis and hours per day spent on agricultural activities.

79. **Palmer, I. *Gender and Population in the Adjustment of African Economies: Planning for Change.* Women, Work and Development, 19. Geneva: International Labour Office, 1991.**

COUNTRY: Sub-Saharan Africa

The book argues the need for consideration of gender issues and agricultural emphasis in theories of structural adjustment, particularly within Sub-Saharan Africa. Throughout the book examples are drawn from Nigeria, Gambia, Burkina Faso, Zambia, Tanzania, Zimbabwe, Cameroon, Niger, Ghana, Kenya, and Botswana, with a brief mention of Lesotho and Swaziland. The examples are used to illustrate broad geographic differences in women's access to land and intra-household occurrence of separate accounting units in agricultural production. More specifically, consideration is given to gender differentiation in access to, and exchange of, agricultural resources within the household through analysis of: allocation of land rights; management of women's fields; separate accounting units and the presence of intra-household markets; differentiation in crop type and yield; divisions of labour and the effect of technological change; time constraints on women's labour and the occurrence of seasonal labour bottlenecks especially during planting and weeding. Separate consideration is given to female headed households.

80. **Panin, A., P. Glalah, et al. *Prospects for Improving Smallholder Food Production in Arid Africa and its Implications for Household Food Security: A Case Study of Botswana.* *Quarterly Journal of International Agriculture* 32.3 (1993): 308-320.**

COUNTRY: Botswana

CROPS: Sorghum, cowpea, millet, maize

Using descriptive and multiple regression analyses the article analyses prospects for improving smallholder sorghum production in Botswana. Information is provided on farm-household characteristics; livestock ownership; cropping systems and inputs used on sorghum fields. Labour is identified as a critical constraint, with harvesting labour being the major limiting factor to increased production. Women contribute over 80% of the total labour used, with donkeys utilized as draught power. The marginal value product of labour is shown to be very low, being 60% less than the rural wage rate, indicating that there may be a disincentive to increasing labour inputs.

81. **Pankhurst, D. *Women's Lives and Women's Struggles in Rural Zimbabwe*. Leeds Southern African Studies . Leeds: University of Leeds, African Studies Unit, 1988.**

COUNTRY: Zimbabwe

The paper outlines gender relations in agriculture in rural Zimbabwe through a village case-study. Historical changes which have occurred in the Communal Lands area are described as are the changes in Shona gender relations, the importance of lineage, customary law, and property rights relating to divorce and widowhood. Pre- and early colonial land rights for women were related to their marital status. Marriage entitled women to land on which specific food crops were to be grown. In some instances women were also able to trade any surplus. Women also had certain obligations to their husbands regarding provision of labour. Widows were allocated small areas of land and divorced women were entitled to land via their parents. There was a strong gender differentiation in crops grown, women cultivating high protein foods crops (e.g. beans and nuts, and staple grains). During this time the quantity of food crops grown gradually decreased, being replaced by crops grown for sale. There are currently no separate landholdings for women within households. Male labour migration resulted in an intensification of women's labour to the extent that they were carrying out all agricultural activities with no concomitant increase in control of labour or production. Remittances from migration have, however, enabled some households to obtain access to: additional land, cattle (utilized for production and as indicators of wealth), vegetable plots, carts and ploughs and the employment of hired labour. Four household types are described in terms of access to resources and the situation of women within them. It is suggested that women's lack of rights within the agricultural system results in a gender based conflict of interests and women's reluctance to further input into agriculture unless they attain relatively high levels of autonomy over production through male migration. Resistance may take the form of open conflict or secret withdrawal of labour from the husband's fields in order to earn income from other sources. Women from all classes are choosing to increase their control over resources by not marrying, although this option is influenced by a number of factors such as level of education, age, proximity to labour markets etc.

82. **Pankhurst, D., and S. Jacobs. *Land Tenure, Gender Relations, and Agricultural Production: The Case of Zimbabwe's Peasantry*. Davison, J., Editor. *Agriculture, Women, and Land: The African Experience*. Boulder, USA: Westview Press, 1988. Chapter 10.**

COUNTRY: Zimbabwe (Mashonaland East and Central Provinces, Manicaland Province)

CROPS: Maize, cotton, tobacco, groundnuts, vegetables

The authors argue that social relations shape women's access to productive resources and that the likely outcome of changes in access to these resources cannot be estimated outside the context of gender relations i.e. analysis of land rights and changes in land tenure cannot be used per se to assess the status of women in society. Throughout the chapter emphasis is placed on the impact of gender relations on agricultural production, emphasizing the active role of women in gender relations of production. Prior to colonial rule women had cultivation rights through a corporate, lineage based land tenure system, although these rights, gained through a husband, were dependent upon fulfillment of obligations as a wife e.g. growing specific food crops; assisting in the cultivation of a husband's fields etc. Colonial state policies heightened competition between men's and women's access to land at both inter- and intra-household level. Women's loss of land rights were closely linked with loss of other customary entitlement, and of household resources in general. Individual perspectives of rural women are used to

illustrate predicaments facing many women in Communal and Resettlement Areas, with gender divisions of labour within agriculture becoming less differentiated within the latter. Women may purchase and use draught animals, but this occurs infrequently - due to their economically marginalised position rather than any socio-cultural taboos. Shortages of labour, particularly within female headed households, are noted and it is concluded that increasing women's access to land will not, of itself, lead to changes in the status of women.

- 83. Peters, P. E. Household Management in Botswana: Cattle, Crops, and Wage Labour. Mook, J. L., Editor. *Understanding Africa's Rural Households and Farming Systems*. Westview Special Studies on Africa . Boulder: Westview Press, 1986. Chapter 8.**

COUNTRY: Botswana

The chapter suggests the need for farming systems research to understand both intra-household relations and inter-household linkages, as the suitability of the household as a unit of analysis is questioned. Recognition of the diversified nature of household income strategies and wide variations in wealth and income between households in Botswana is important. Throughout Botswana plough agriculture with oxen is common. Cattle and donkeys are also used as draught animals and tractors have been introduced. The two critical constraints of plow arable production are draught power and labour. In addition, unpredictable rainfall makes the timing of planting critical. Information is provided regarding animal ownership by household and area of land planted. Ownership of sufficient draught animals is uncommon, hence household links with other households through kinship, affinity, co-residence, friendship or patron/client relationships are vital. The position of the household in the 'queue' for access is important and may exacerbate existing inequalities. Household networks vary throughout the lifecycle. The authors elucidate the need for further research into the role of women in agriculture with an emphasis placed on household variation and differentiation between cultural ideals of conventional practice and the actual dynamic relationships that occur. The interdependence in farming between men and women may be disguised by the emphasis placed on FHHs which have generally been identified as experiencing shortages of male labour and lack of cattle. There is a need for more precise understanding of the relative and interactive effects of the shortage of draught animals and male labour in different types of households in order to understand more clearly the reasons for reduced ploughing by certain households. It is included that modes of access to draught power are linked to those of labour allocation; that male and female labour are non-equivalent both in task and exchange value thus excluding women from exchanging labour for draught other than with close kinship relations.

- 84. Pottier, J. African Food Systems: An Introduction. Pottier, J., Editor. *Food Systems in Central and Southern Africa*. London: SOAS, University of London, 1985.**

COUNTRY: Central and Southern Africa

The controversy surrounding suggested causal links for Africa's deteriorating food output per capita is discussed. The allocation of blame to labour bottlenecks in Central and Southern Africa ignores the occurrence of landlessness in other areas of sub-Saharan Africa. It is suggested that no 'universal' rule can be given for the impact of land scarcity or labour shortages due to the usual existence of a range of converging factors. It is also important to

distinguish relative from absolute shortages. Land ownership and the disposal of produce are cultural constructs, however some broad principles operating at the level of cultural ideology are discussed. It is suggested that women in matrilineal societies generally enjoy a relatively high degree of security of tenure and play a greater decision-making role in control of the overall supply of food than do women in patrilineal societies. The complexity of control over river-garden produce in Malawi and alternative production strategies in Zambia are discussed. Women proclaimed their acquired right to an independent source of cash despite male control of land, and bargaining ensued regarding production arrangements. It is concluded that an understanding of African food systems is dependent on grasping how specific cultural rules interact with the demands created by the penetration of capital. Generalizations associated with gender divisions of labour are reviewed, particularly with regard to maize cultivation.

85. Richards, P. *Coping with Hunger. Hazard and Experiment in an African Rice-Farming System*. London: Allen & Unwin, 1986. Chapter 4.

COUNTRY: Sierra Leone (Moyamba District)

CROPS: Rice, groundnuts, cassava, sweet potatoes, cowpeas, vegetables, coffee

Details are provided of household food production systems including the relation between personal and household fields and gender divisions of labour. Adult dependents, including wives, may be allocated a portion of the main farm by the household head and the harvest is the private property of the individual. The household head may also have a private farm and a tree-crop plantation (coffee). Dry season plots of cassava, sweet potatoes and vegetables in dry swamps are also considered private plots. Household farm activities always take precedence over private plots. Priority is paid to early rice (household farming efforts) while *yaka* rices are planted on individual plots. Women may control farms if they are sufficiently influential, widowed or single. Land rights are generally determined within family groups although informal recognition of land rights through the mother's brother and a clientelist political system also exist. Farm households vary widely in size, although membership is flexible, and work is generally specialized by gender and age. Men carry out land preparation and build fences, while women cook and weed, although there is flexibility in the gender division of labour for all tasks. Some differentiation occurs on a seasonal basis, with men more actively involved in agricultural work in the earlier part of the year (e.g. February-July) while women have a greater input from June onwards. Non-household labour (male and female) is particularly important during brushing and harvesting. Labour may be hired or obtained through work groups, of which there are a number of types.

86. Roelofs, K. P. *Women and Food Production in Zambia*. Southern African Team for Employment Promotion Working Papers . Lusaka, Zambia: ILO, 1988.

COUNTRY: Zambia

The paper presents data, analyzed and critically examined to determine how women's access to production resources affect productivity. FHHs have more limited access to the resources of production than do MHHs. Geographical differences in crops grown by women are described, cassava and maize being the most prevalent. Gender differentiation of labour also varies by district, with some areas placing a strong emphasis on interdependence and cooperation between men and women. In other areas each gender has complementary roles although some flexibility does exist. Similar differences were noted in terms of decision making. In areas where male out-migration is high yet decision making is still a male preserve,

delays in planting occur although some men return to assist during times of peak labour demand (e.g. harvesting, ploughing and clearing new fields). Male out-migration has also resulted in decreased fallow periods due to the lack of male labour to clear new fields. The level of commercialization, costs of production and income also varies regionally as did utilisation of generated income. Farm households are increasingly headed by women and FHHs have more limited access to production resources than MHHs. Zambian women acquire use rights to land through marriage or, more seldom, through allocation by male relatives or village headmen. Married women may lose access to land if widowed or divorced. Private land ownership is gradually replacing traditional land rights. This has resulted in women being increasingly marginalised with respect to land in terms of both quantity and quality.

- 87. Rose, L. 'A Woman is Like a Field': Women's Strategies for Land Access in Swaziland. Davison, J., Editor. *Agriculture, Women, and Land: The African Experience*. Boulder, USA: Westview Press, 1988. Chapter 9.**

COUNTRY: Swaziland (Central Region)

Through an analysis of women's access to land in Swaziland the author criticizes generalizations regarding women and land tenure. Local realities are often obscured by emphasizing ideal constructs. Consideration is given to the difference between these ideal formulations and actual manifestations of human behaviour through an analysis of strategies of control, avoidance and deception, and the way these are utilized by women. There is considerable flexibility in the way women gain access to and retain rights in land (i.e. women may inherit and own land, and strategies utilized to gain access vary according to marital status etc). It is concluded that although women are actively asserting their claims to land, their success in obtaining access remains unclear.

- 88. Safilios-Rothschild, C. *Agricultural Policies and Women Producers*. Adepoju A., and Oppong C., Editors. *Gender, Work and Population in Sub-Saharan Africa*. London: James Currey, CHECK. Chapter 4.**

COUNTRY: Sub-Saharan Africa

The chapter examines the invisibility of women in agricultural statistics in spite of the increasing 'feminization' of smallholder agriculture in a number of African countries. This is due to a number of factors including insufficient data on agricultural decision making; the persisting idea of the household as a homogeneous unit; lack of land ownership by women and sex stratification systems. The consequences of women's invisibility on agricultural policies such as food security, pricing, extension, agricultural credit and agricultural research are discussed. Nevertheless, the invisibility and marginalisation of female producers is reducing agricultural policies and programmes are being rationalized. Factors responsible for these changes include the documentation of FHHs; increasing emphasis on gender issues by many donors; availability of funds for evaluation missions; organisation of women farmers into groups; adjustment of policies and programmes to existing gender realities; implementation difficulties experienced by male biased agricultural programmes, and the failure to increase agricultural production and ensure food security in many African countries.

89. Saito, K. A. *Raising Agricultural Productivity of Women Farmers: The Case of Kenya*. : Unpublished, n.d.

COUNTRY: Sub-Saharan Africa: Burkina Faso, Kenya, Nigeria, Zambia

A presentation of a UNDP-funded, World Bank-executed project based on four country studies - Burkina Faso, Kenya, Nigeria and Zambia. The studies document women's role in agriculture, identify and evaluate the key constraints faced in attempting to raise productivity and recommend measures to relieve these constraints. Data were collected from random selection of households. The study indicates that the African rural households are changing and traditional farming systems breaking down due to evolving social and economic circumstances. Male out-migration has led to a decrease in gender specific labour differentiation, enabling women to grow cash crops, perform traditionally male tasks (e.g. land clearing) and play a greater role in decision making. In association with this rise in the number of female de facto managers of rural households, FHHs are becoming increasingly common. FHHs tend to be particularly disadvantaged in landholding, supply of family labour and extension contact. As a result of reduced family labour and the lack of cash or credit with which to hire labour, households have adjusted cropping patterns and farming systems to fit labour availability (e.g. by limiting the area cultivated, the amount of weeding or fertilizer input or producing less labour intensive crops such as cassava). It is recognized that the already heavy work load of women farmers in both productive and reproductive activities affects strategies for improving agricultural productivity, particularly those focussed on women. However, the household survey data indicate that potential agricultural output is reduced due to women's disadvantaged access to inputs and support services and productivity gains can only be realized by changing this situation. Women's land rights have generally worsened, frequently evidenced in allocation of smaller plots for their own use. However, labour shortages at key periods suggest that increasing access to land should be accompanied by better access to inputs and technology if productivity is to be raised. This would best be achieved, in the case of women, by labour- and energy-saving technologies. In order for this to be successful women should be included in the planning process and trained in the operation of appropriate technology. Contact with extension is also important, as is access to cost-effective and sustainable financial services.

90. Savane, M. A. *The Effects of Social and Economic Changes on the Role and Status of Women in Sub-Saharan Africa*. Moock, J. L., Editor. *Understanding Africa's Rural Households and Farming Systems*. Westview Special Studies on Africa . Boulder: Westview, 1986. Chapter 7.

Using information collected from three countries, the paper summarizes a larger study attempting to explain changes in gender divisions of labour result from processes affecting conditions of production and consequent patterns of social stratification.

COUNTRY: Senegal

CROPS: Groundnuts, cotton, millet, sorghum, maize

Women are described as engaging in household millet production as a result of the introduction of export crops. Women were previously excluded from millet production but now participate in sowing, weeding, field clearance, guard duty, harvesting and transportation in addition to working on their own plots growing groundnuts for consumption and sale. Work on millet fields is now compulsory and competes with labour input into their own fields. Differentials were noted by social class with wealthier farmers using hired labour.

COUNTRY: Burkina Faso
CROPS: Cereals, groundnuts, vegetables

Three migration zones are discussed: in the departure zone women provided 40% of the labour input on family farms whilst also cultivating their own plots to provide food for the household. Migration has led to the introduction of women's cultivation of cereals on fallow land (also for household consumption) with an associated reduction on time spent on market gardening and food processing. In the reception zone women participated in all agricultural activities on family farms excepting field clearance and cutting millet stalks. They also tend their own plots (cultivating sorghum, millet, groundnuts, rice, greens and vegetables) with some assistance from children. Fertilizer and seeds may be obtained from their husbands. In the resettlement zone women also provide labour on household and individual plots although the latter are now tended in their 'spare time', women's input into small-livestock raising has also declined resulting in a reduction of women's income.

COUNTRY: Ivory Coast
CROPS: Coffee, cocoa, plantains, bananas, cassava, cocoayam, yams

Adoption of cash crops has led to new divisions of labour by gender and crop. Although women concentrate on subsistence farming they may also be required to assist with cash crops. Particularly in the north women's agricultural workload has increased, both on cash crops (cotton) and subsistence crops since both cash crop (cotton) and subsistence crop (rice, groundnuts, maize) production is entirely dependent on family labour. Recognition is given to the differential effects of mechanization on divisions of labour within households. In Senegal the influence of social differentiation is clearer: women on wealthy plantations benefit from mechanization through reduced demands on labour coupled with an increase in income. Where mechanization is partial, women spend more time on household fields and less time on their own plots, affecting both their productivity and income. It is concluded that the effects of mechanization on women largely depend on their husband's social status since this affects accumulation of capital and land etc.

91. Seifert, M. The Adoption of Animal Traction in a West African Savannah Area - an Example of Autonomous Reactions to Population Growth. *Quarterly Journal of International Agriculture* 32.3 (1993): 280-292.

COUNTRY: Ghana (Northern Region)

Through a comparison of two villages the paper demonstrates that intensification of land use stimulates a shift from hoe to plough agriculture, this exchange being a complex process. In both villages bullocks are the source of draught power, however, in Wundua they are used for carting, ploughing, ridging and weeding, whilst in Dalun they are only used for ploughing and, occasionally, carting. Systems of exchange (both commercial and reciprocal) of animals and ploughs occurred more frequently in Wundua. The main advantages of using animal traction were reduced drudgery and improved timing of land preparation. Introduction of animal traction also enabled diversification of cropping patterns. Bullocks may be initially seen as a poor alternative for those without access to tractors. Four groups of agricultural households were used to illustrate the hypothetical evolutionary path of animal traction which affects farming systems but also social organisation and differentiation within a community.

92. **Serenje-Mpika-Chinsali. *The Impact of Ox Draught Power on Small Scale Agriculture in Mpika District, Northern Zambia.* IRDP Occasional Paper No. 7 . Mpika, Zambia: IRDP, Undated.**

COUNTRY: Zambia (Northern Region)

CROPS: Hybrid maize, local maize, beans, finger millet, groundnuts, cassava, sweet potatoes, groundbeans

The report considers the performance of an ox supply programme in a region of traditional hand cultivation. Oxen were introduced mainly for ploughing, ridging, and pulling carts. The major benefit was improved timeliness for planting and fertilizer application. However, weeding occurred later than the optimal date due to more extensive use of labour. This led to a decrease in yield/ha and an increase in the labour requirements of other household members.

93. **Shoepf, B., W. Engundu, et al. *Women and Structural Adjustment in Zaire.* Gladwin, C. H., Editor. *Structural Adjustment and African Women Farmers.* Gainesville: University of Florida Press, 1991. Chapter 6.**

COUNTRY: Zaire

The effects of structural adjustment policy and programmes on primary producers of food crops are described. These include increased access to seeds, fertilizer, credit and mechanized traction for men whilst women have had increased demands made on their labour with no accompanying increase in income. Women's resistance to these demands is described. In southeastern Shaba, matrilineal land inheritance and matrilocal residence led to women's autonomous decision making and enabled them to continue cultivating manioc. In other areas with less female autonomy, women abandoned a second groundnut crop and reduced family food gardens; or, when the manioc crop was poor, sold groundnuts for cash to the detriment of children's nutrition. Examples are given of women's land and labour being seceded to their husbands for production of cash crops, accompanied by increasing intra-household and gender conflicts.

94. **Skinner, H. *Participatory Technology Development in Dryland Kenya: The Experience of DAREP Tools and Tillage Research. Workshop for Rural Mechanization: Technology for Rural Livelihoods.* Natural Resources Institute, 6 Sept. 1994.**

COUNTRY: Kenya (Embu, Tharaka Nithi, Isiolo Districts)

CROPS: Millet, sorghum, maize, cowpeas, grams, cattle, goats

The paper provides information on an evaluation of technology developed and/or introduced by a tools and tillage research programme. The tools which were evaluated by both male and female farmers over two seasons included the following: Bukura tool bar, 'Mutomo' wooden beamed plough, planting pits for water and fertility conservation, planting furrows, use of mouldboard plough for weeding, use of donkeys and single animals for ploughing operations, hand held 'jab' planter, drag hoe weeder, push weeder and 'Py' hoe. The evaluation concluded that weed control and soil and water conservation were priority research areas for rural mechanization and that research priorities for men and women are not the same.

95. **Starkey, P. Animal Traction: Constraints and Impact among African Households.** Haswell, M., and Hunt, D., Editors. *Rural Households in Emerging Societies.* Oxford: Berg Publishers Limited, 1991. Chapter 5.

COUNTRY: Africa (Sub-Saharan)

CROPS: Maize, millet, groundnuts, beans.

The article examines constraints on the use of animal traction and economic and ecological changes associated with its introduction. Some consideration is given to the differential use of draught animals by women. The author argues that the introduction of draught power and ridge formation has had a major influence on the timeliness of ploughing, seeding and weeding. The associated trend towards extensification of agriculture is also described.

96. ---. *Animal Traction in Tchad: Policies and Approaches.* Oxford: Oxfam, 1993.

COUNTRY: Tchad

CROPS: Cotton, millet

This report of agricultural production and the use of animal traction in Tchad focusses on gender differences in resource control, labour use and decision-making. Although ethnicity affects gender relations throughout Tchad, cattle are generally owned by men and, in the case of female ownership, managed by male kin. Both men and women participate in crop production tasks although the number of male family members influences gender differentiation of tasks. In FHHs women may carry out all crop production operations. Although women in male headed households do not generally have large fields they cultivate food crops and vegetables around their homes. Marketing of cotton and control of income is dominated by men while women market millet and play a major part in transportation of goods. Women are largely excluded from using animal traction for ploughing. When women and girls do plough it is usually due to a shortage of active male labour. However, it is suggested that women generally benefitted from the introduction of animal power, particularly during transportation of the harvest. Ploughing and ridging of women's fields is usually done by male relatives or neighbours through reciprocal labour or hiring arrangements. Women experienced problems in obtaining access to animal power due to lack of cash and because of their low position in 'queues' for ploughing services. It is argued that a more general expansion of the use of animal power will improve women's access, particularly for transport purposes. The increasing use of donkeys for cultivation, carting and pack transport is also advantageous to women as donkeys have few links with masculinity and male domination. Finally, it is also suggested that women's groups can improve women's access to animal traction.

97. ---. *Animal-Powered Transport in Africa. Appropriate Technology 20.1 (1993): 9-11.*

COUNTRY: Africa

The author argues that insufficient use is made of animal powered transport in Africa and emphasizes potential benefits of time saving and reduced drudgery for women from its introduction. Regional variations are noted in the species of animal used and the increasing use of donkeys in many areas is noted. Donkeys, which can transport substantial amounts in relation to their size are viewed as particularly suited to use by women since they are regarded as 'gender neutral'. Since access to credit appears to be one of the most important factors

determining the use of animal transport and carts by women, it is suggested that credit should be made more accessible to women. The article concludes that more general stimulation of the use of animal powered transport would benefit most regions.

98. ---. **Donkey Utilisation in Sub-Saharan Africa: Recent Changes and Apparent Needs.** *Second International Colloquium on Working Equines*. Rabat, Morocco, 20 Apr. 1994. Unpublished.

COUNTRY: Sub-Saharan Africa

The paper describes the changing, and frequently increasing, use of donkeys in a range of countries throughout Sub-Saharan Africa. Donkeys are utilized for transport, tillage and weeding and have advantages over oxen in drought conditions. Women are viewed as benefitting more from donkeys than oxen or cattle since donkeys are perceived as 'gender neutral'. Since donkeys are also frequently used by children for water transportation, women are released from customary portering tasks by their introduction.

99. ---. **A World-Wide View of Animal Traction Highlighting Some Key Issues in Eastern and Southern Africa.** *Improving Animal Traction Technology*.

COUNTRY: Worldwide (Sub-Saharan Africa)

The paper covers a global overview of animal traction and discussion of some pertinent issues relating to workshop themes including access to draught animal power by women. Although draught animal power has historically been a male-dominated technology, women increasingly have access to, and control over, animal traction, particularly in areas of male out-migration. The success of women's groups in providing access to draught animal power has been mixed due to the time required for managing work animals. In addition, the participants in a number of these programmes are unmarried women and their participation ends on marriage. In situations where daily responsibility for cattle owned by women have been handed to men for daily management, women also experience problems of access. The extensification of agriculture associated with animal traction may increase the work load of women through increased weeding, however, the adoption of animal-drawn weeders could reduce this work load. Animal power is seen to be particularly beneficial for transportation by reducing drudgery of head-loading, increasing marketing potential and stimulating the rural economy. It is acknowledged, however, that problems may be encountered where men own animal-drawn carts and take over marketing activities previously controlled by women. It is suggested that increasing credit provision for carts for women might be beneficial.

100. Starkey, P., Dibbits, H., and Mwenya, E. **Animal Traction in Zambia: Status, Progress and Trends 1991.** Wageningen, The Netherlands: Institute of Agricultural Engineering, 1991.

COUNTRY: Zambia

Gender differentials are noted for access and use of draught animal power. Ploughing is carried out by men, although women may participate by leading animals and planting seeds behind the plough. In cases where women own draught animals, ploughing is carried out by male relatives or employees. Non-animal owning female farmers may hire or borrow oxen and a ploughman. The reason for this gender differential is cultural rather than technical but all

hirers experience delayed ploughing. In Western, North Western and Eastern Provinces women utilize animal power for cultivation and transport and training for women in the use of d.a.p. has been undertaken. In the Western Province ox carts are expensive, therefore traditional sledges pulled by two, four or six oxen are more frequently utilized. Shortages of draught animals occur on a local rather than provincial basis and differences in the standard of training are noted between animals that are occasionally used for ploughing and those that regularly pull sledges.

101. **Starkey, P., and Mutagubya, W. *Animal Traction in Tanzania: Experience, Trends and Priorities*. UK: NRI, 1992.**

COUNTRY: Tanzania

The benefits of animal power (cattle and donkeys) are explored, including timeliness, risk and drudgery reduction. Draught animal technology improves timeliness of operations, timeliness of tillage being particularly important in arid areas. Utilisation of animal power for weeding allows farmers to weed on a more rapid and timely basis, thus reducing labour bottlenecks. Drudgery is also reduced in a number of tasks. This may be of particular benefit to women who may be relieved of headloading tasks. The role of animal power in transport is also important in terms of accessing markets, increasing accessibility to land etc. Ownership of cattle and utilisation of d.a.p. is largely a male activity, although regional variations are noted regarding women's participation in ploughing. It is argued, however, that animal traction benefits all family members and does not increase the marginalisation of women. The main benefits to women are in terms of transport of fuel wood, water, crop harvests and goods for markets. In some instances school attendance was cited as a reason for lack of adoption of animal traction as children play an important role in looking after and using animals. In conclusion, it is suggested that development strategies may need to be targeted towards women, particularly credit programmes, as gender-neutral initiatives do not necessarily reach women.

102. **Staudt, K. A. *Women Farmers and Inequities in Agricultural Services*. Bay, E. G., Editor. *Women and Work in Africa*. Colorado, USA: Westview Press, 1982. Chapter 10.**

COUNTRY: Kenya (Kakamega District)

CROPS: Maize, beans

Using survey data the paper provides empirical support for the hypothesis that the government gives preference to men in the provision of agricultural services. A number of reasons for discrimination are explored. Within the sample households there was some gender division of labour although many tasks were interchangeable. However, men traditionally clear land, plough with oxen and manage the livestock. Women engage in extensive associational activity (e.g. church groups, and communal agricultural groups for planting, weeding and harvesting) whilst men attend *barazas* (weekly meetings at which government announcements are made and judicial decisions taken). The separate gender-based communication patterns impact significantly on the transmission of agricultural information. Although women generally appear to have less access to services than male farmers, some differentiation by age, household structure and land holding is noted for women. Nevertheless, it is argued that female farmers are, in fact, as innovative and productive as male farmers. In conclusion, the discrimination against women in access to agricultural services is seen to stem from prejudice on the part of

the instructors, and customary avoidance of interaction between trainers and women in the absence of male kin.

103. Stone, M. P., Stone, G. D., and Netting R. McC. *The Sexual Division of Labour in Kofyar Agriculture*. Unpublished, Undated.

COUNTRY: Nigeria (Central Region)

CROPS: Yams, grain, millet, sorghum, rice, groundnuts, bambara nuts, rice, cocoyams, sesame, cereals

The paper provides a critique of theoretical and methodological approaches to the identification of principal determinants of the sexual division of labour in agriculture. The critique centres on the argument that technologically intensive and extensive agricultural systems may share similar labour routines. This is particularly true when intensification takes the form of increasing overall labour inputs when male and female work routines are typified more by similarities than differentiation. Specific analysis is made of the Kofyar's agricultural system on the Jos Plateau, to support the argument. Women's contribution to agriculture has varied over time with changes from intensive to extensive to, once again, intensive agriculture. During the 1980s women's production and sales of yams, rice and groundnuts increased, with women having a high level of autonomy over both the allocation of their own labour and the ability to call on the labour of others, cultivation being entirely manual. Women contribute almost half of all farm labour. Despite overall relative contributions being similar, some differences in labour by gender do occur, particularly in the case of groundnuts which are a predominantly female crop. Men, therefore, have a somewhat greater input into the production of other crops. Seasonal complementarities in male and female labour are noted: women spend almost an hour per day more than men in weeding of yams, cereals and groundnuts during August and September. However, during the peak mounding season women's labour input is less than that of men due to beer brewing. During September and October women have a greater input into harvesting groundnuts and cowpeas. It is concluded that inputs by men and women are relatively even overall and a breakdown of labour by gender, task and crop reveals no clear differentiation of labour. 18% of women's labour input occurs on their independent fields. This may be done individually or, more frequently, by participating in group activities on others' fields. Men generally contribute little to women's groundnut cultivation. The production of groundnuts is used to examine levels of competition and cooperation between household and individual production: scheduling of groundnut cultivation is flexible and protracted and thus does not conflict with the more pressured cultivation of cereals. Some innovation is occurring within women's production through the introduction of new forms of labour groups which divert women's labour away from household production. The intrinsic role of women's labour is recognized by men, as is their autonomy within marriage (female initiated divorce being common). As such women have a strong bargaining position. The main difference in the organization of work on independent production and on household fields is the access to household labour, with women receiving very little help other than from other women. It is argued that this is the major limitation to women's independent productive potential. Access to land for independent production appears to be through allocation by husbands, unofficial renting and borrowing of land from other households. It is noted that differentiation arises (in terms of yield and control over labour assistance) between different economic and social categories of women.

104. **Suda, C. A. *Division of Labour by Gender and Age in Kakamega District: Implications for Equity in Kakamega District*. Paper presented at the Women Studies Seminar held at Golf Hotel Kakamega, 25th-28th May, 1988. Nairobi: Institute of African Studies, University of Nairobi, 1988.**

COUNTRY: Kenya (Kakamega)

CROPS: Maize, beans, potatoes, millet, sorghum, cowpeas, bananas, vegetables, sugarcane, tea, coffee

This report is a pilot survey of 143 women in 13 Divisions in Kenya, using the individual women as the unit of analysis. The district experiences high male out-migration and the partial withdrawal of child labour due to increased school attendance has exacerbated women's productive and reproductive workloads. There is a strong gender differentiation within agricultural activities with women focussing on subsistence crops, while men work largely on cash crop production. A disproportionate amount of women's labour is spent on planting, weeding, harvesting and marketing food crops, whilst male participation is greater in land clearance and ploughing. Over 60% of households plough with oxen. Hoes are utilized mainly by women on land holdings too small for efficient use of tractors. Introduced technology has largely by-passed women, restricting them to subsistence production. Hired labour is frequently used, with male labour hired for ploughing. Reciprocal labour arrangements are used to overcome labour bottlenecks, women's groups being an important aspect of social organisation. In such regions of high male out-migration women have taken over many customary male activities, including ploughing. Cattle are considered high status livestock and serve multiple roles (i.e. social, economic and practical) and management of livestock is a predominantly male activity. Therefore, women's limited access to social resources is seen to be linked with ownership and control of cattle. The issue of whether the division of labour by gender is the cause or consequence of female subordination is discussed. The need to understand socio-cultural values is stressed and the author concludes that the relationship between division of labour and social status is both causal and dialectical, with women's roles being defined and legitimized by a complex system of cultural values, beliefs, norms and attitudes which may act together to institutionalize and reinforce gender differentiation. Suggested interventions which could reduce women's workload are described.

105. **Swindell, K., and Iliya, M. A. *Accumulation, Consolidation and Survival: Non Farm Incomes and Agrarian Change in North West Nigeria*. African Agriculture: Crisis and Transformation (Working Paper Series) Working Paper No.6. New York: Social Science Research Council, 1992.**

COUNTRY: Nigeria (Sokoto State)

CROPS: Millet, sorghum, groundnuts, beans

The role and pervasiveness of unemployment and off-farm employment in three villages in northwestern Nigeria is assessed. Increases in non-farm employment and expansion of the education system has reduced household labour supplies. This has resulted in an increased amount of farm work being done by women, including those who would formerly have been in seclusion. The greatest number of women farmers are found in poorer households. The paper suggests that the participation of women in agriculture acts both as an indication of, and a partial solution to, labour shortages.

106. **Sylwander, L. Women and Animal Traction Technology. Starkey, P., Mwenya, E., and Stares, J., Editors. Lusaka, Zambia, 18 Jan. 1992. Improving Animal Traction Technology . Wageningen, The Netherlands: Technical Centre for Agricultural and Rural Cooperation (CTA), 1994.**

COUNTRY: Southern and Eastern Africa

The paper provides background information on the current situation with respect to women and animal traction, the causes of existing problems and possible solutions. It is argued that difficulties that women experience in accessing draught animal power lead to timeliness problems and lower yields despite women spending more time on agricultural production than men. Interdependent and complementary female and male farming systems exist together although there is a tendency for women to focus on subsistence food crops using hand tools while men specialize in cash crop production utilizing animal traction. Geographical variations occur in women's involvement with draught animal power: in The Gambia, Cameroon and most communities in eastern and southern Africa women do not use draught animals. However, in communal areas of Zimbabwe, Kenya, Tanzania and Zambia women are able to utilize animal traction. The benefits to women of access to this source of power are identified as reduction in drudgery for fetching water and firewood, transporting crops and weeding. However, it is argued that practical and socio-cultural constraints frequently outweigh economic benefits, limiting women's access. The issue of whether access or ownership is preferable for women is considered as is the weakness of extension and training programmes. The need for involvement of social scientists in animal traction research is voiced.

107. **Texler Segal, M. *Land and Labor: A Comparison of Female- and Male-Headed Households in Malawi's Small-Holder Sector.* WID Forum X . Michigan, USA: Michigan State University, 1986.**

COUNTRY: Malawi

The paper compares data on male- and female-headed smallholder households in Malawi. Information is provided on eight agricultural development districts. Crop production is the major source of income for most households, although alternative income sources include livestock, remittances, and off-farm work. Although geographical variation occurs, FHHs generally have less land, labour and lower incomes than male headed households, crops forming the largest source of income. FHHs also have fewer household members, thus limiting their access to income from off-farm activities. Many FHHs do not possess sufficient land to grow adequate food for the household. At the same time, production of cash crops may have a negative effect on nutrition as income obtained is insufficient to purchase adequate food. Farm clubs and groups offer access to credit and extension services, however in some areas selective recruitment has resulted in the marginalisation of women's access to these resources. However, FHHs who were members of farm clubs generally experienced benefits in terms of income and calorific provision.

108. ---. Work-Family Systems of Malawi's Smallholder Households: An Analysis of Date from the 1983-84 ASSA. *Journal of Social Science* 13 (1986): 104-123.

COUNTRY: Malawi

CROPS: Maize (local and hybrid)

Using data from the 1983-84 Annual Sample Survey of Agriculture the paper examines female participation within the work-family systems of a representative sample of smallholder households. Male labour migration has increased the responsibilities of women, and their *de facto* rights, within both subsistence and cash crop production. Information is provided on land holding and household size, together with mean values on selected variables by sex of head of household. Data are also listed for crops grown and livestock ownership. 31.6 per cent of smallholder households are headed by women and the paper contains an analysis of these households. FHHs generally have less land and fewer head of livestock - largely cattle and goats. The smaller size of household means that FHHs generally have less family labour available, particularly male labour. They also realize less income from crops and livestock and have lower average gross annual incomes. A FHH is more likely to gain access to land in her own village through a female relative, even in areas of patrilinear inheritance. However, the small size of land holding means that they have more unused labour capacity than do male headed households. Farm clubs or groups exist throughout Malawi. Female-headed club households have larger than average land holdings, higher gross annual incomes and are more likely to meet the caloric requirements of their households than are non-members. Benefits accrued from club membership are more efficient use of land and labour through fertilizer use and improved seeds. Access to agricultural training and extension services appears to be linked to household structure, in that lone females find attendance difficult. It is concluded that the absence of a full-time adult male is only likely to be problematic during land preparation and planting although in areas of patrilinear control female household heads may experience problems of access to other resources.

109. Third World Legal Studies. Realizing the Rights of Women in Development Processes: Women's Legal Entitlement to Agricultural Development and Financial Assistance. McCarney, R. *Household Food Security and the Role of Women in Africa*. Indiana: International Third World Legal Studies Association and the Valparaiso University School of Law, 1991.

COUNTRY: Cameroon

The paper describes women's decisions to continue independent cultivation of their own crops and retain control of income, rather than to work for their husbands and jointly obtain higher value marginal output. The dual role of agricultural technology (i.e. to increase production and to preserve what is produced) is discussed. The detrimental effect of introduced technologies such as animal draught power, on women's agricultural production is described as is the role of agricultural extension services regarding household food security. It is suggested that there is a need for further analysis of the complex links between women's access to land, technological adaptation, land use patterns, productivity, employment and household food security.

110. **Tiffin, M. *Environmental Change and Dryland Management in Machakos District, Kenya 1930-1990: Farming and Incomes Systems*. ODI Working Paper 59 . London: ODI.**

COUNTRY: Kenya (Machakos Region)

CROPS: Maize, beans, cowpeas, pigeon peas, cotton, fruit trees

The paper describes the historical development of farming systems Machakos region. The mixed cropping system involved the use of ploughs and oxen but late planting occurred due to the delaying of ploughing until the onset of the rains. Those without ploughs experienced particular problems of timing. As a result, 'overlapping cropping' frequently occurred. Labour bottlenecks occurred during weeding, ploughing and harvesting. Capital items limited production due to lack of access to oxen and ploughs. Farming systems in the older settled areas of AEZ 4 since 1980 altered due to reduced size of farms, however methods of husbandry led to more stable yields. Broadcasting was replaced by row planting and intercropping. Associated weeding with ploughs reduced labour bottlenecks previously experienced at this time. Early and dry planting also resulted in improvements in timing. The planned farming system within Makueni is also described. Increased involvement of men in farming was seen to be associated with increased profitability, however labour was still a limiting factor at peak periods.

111. **Tjip Walker, S. *Innovative Agricultural Extension for Women: A Case Study in Cameroon*. Policy, Research, and External Affairs Working Papers Women in Development WPS 403. Washington: World Bank, 1990.**

COUNTRY: Cameroon (North West Province)

CROPS: Coffee, cocoa, oil palm, cassava, cocoyam, yams, maize, beans, groundnuts, roots, tubers, gourds, rice, Irish potatoes

The paper examines changing agricultural practices and extension services, particularly in terms of contact with women farmers, in Cameroon's North West Province. Women plant, weed and harvest food crops and also play an important part in land preparation, planting, weeding and harvesting of cash crops. Gender divisions of labour are becoming less rigid due to increasing commercialization and reduced differentiation between the cash/food crop status of some crops (e.g. potatoes and maize). Utilization of marginal land and reduced fallow periods have resulted in women increasing production of these crops, although men's agricultural activities appear to be unchanged.

112. **Tobisson, E. *Women, Work, Food and Nutrition in Nyamwigura Village, Mara Region, Tanzania*. TFNC Report No 548 . Dar es Salaam, Tanzania: Tanzania Food and Nutrition Centre, 1980.**

COUNTRY: Tanzania (Mara Region)

CROPS: Maize, tubers, finger millet

The report provides detailed information on intra-household structures, organisation of work, specialization of skills and appropriation of labour returns within Nyamwigura village. Information is also provided on agricultural production from both a technical and gender perspective. Women's heavy workload and limited control over household resources are seen to be linked to historical and structural factors. Women seldom participate in village meetings and have no authority through which to express leadership potential. The area of land and type

of crops cultivated varies according to women's marital status. Married women generally grow relatively labour intensive crops on small areas of land, whilst single women generally have access to larger areas of land but cultivate less labour demanding crops (e.g. maize and tubers).

- 113. United Nations Economic Commission for Africa. *Barriers to Access of Rural Women to Land, Livestock, Other Productive Assets, Extension Services and Credit in Selected African Countries*. Geneva: United Nations, 1991.**

COUNTRY: Africa (general)

Using examples from Lesotho, Kenya, Mozambique, Ethiopia, Gambia, Sudan, Tanzania, Burkina Faso, Botswana, Liberia, Uganda, Ghana and Cameroon, the paper describes problems and issues facing women farmers in Africa and highlights potential areas for change in order to raise agricultural productivity. The traditional gender differentiation of roles for food production and processing influence access to resources. These are in turn linked to security of land tenure. Women are experiencing increasingly marginalised access to land as a result of moves away from collective towards private ownership of land. Positive change is also described using examples from Ghana, Kenya and Cameroon. Women also have difficulty in obtaining access to credit, which has led to the formation of informal credit schemes, cooperative structures and women's associations in Ghana, Cameroon, Kenya, Mali, Nigeria, Zaire. The traditional male domination of large livestock, associated technologies and other inputs also exacerbates women's difficulties in obtaining access to the factors of production. The formation of this male domain of draught animal power may be assumed or culturally defined. It is concluded that although there are complex issues to be considered, legal access to land titles is of fundamental importance in improving women's participation in agricultural production.

- 114. United Nations International Research and Training Institute for the Advancement of Women. *Women and Credit*. Mendez, K. *Women's Access to Land as an Asset: An Overview of the Laws in 59 Countries*. Research Paper Series . Santo Domingo: INSTRAW, 1990. Part III.**

COUNTRY: Africa (general)

The paper describes women's access to land in twelve African countries. Inheritance laws and property rights, land reform laws and legislation affecting women's access to credit are described. Information is also provided on religious laws and customary practices.

- 115. Unknown. *Raising Agricultural Productivity for Women Farmers and Improving Natural Resource Management: The Case of Burkina Faso*.**

COUNTRY: Burkina Faso

CROPS: Maize, sweet potatoes, millet, sorghum, cowpeas, groundnuts, bambara nuts, okra, roselle, vegetables

The paper describes traditional land tenure systems and women's generally decreasing access to land. Insecurity of access discourages investment in soil improvement although women have been encouraged to use *diguettes* (rock lines constructed along the contour) and *zai* (a water collection technique). These may increase yields by up to 50% but the possibility

of land being reallocated to household production acts as a disincentive. Women's main labour obligation is to household fields and independent access to agricultural inputs, especially draught animal power is generally limited. An adaptation to these constraints is the formation of 'working groups', particularly for weeding and agroprocessing activities. Use of donkey traction reduces women's labour in hours on household fields by almost 50% and the use of ox traction by 40%, but neither appear to be used on women's independent fields. Women's agricultural activities have a marked seasonal pattern with the greatest labour demand occurring during the rainy season. Critical labour bottlenecks occur during weeding and late planting from late June to July. Women's responsibility for agricultural production varies within and between ethnic groups and also changes during the lifecycle. However, female labour productivity generally appears to be higher than that of men.

116. **Vellenga, D. D. Matriliny, Patriliney, and Class Formation Among Women Cocoa Farmers in Two Rural Areas of Ghana.** Robertson, C., and Berger, I., Editors. *Women and Class in Africa*. New York: Africana Publishing Company (Holmes & Meier Publishers), 1986. Chapter 4.

COUNTRY: Ghana (Southern Region)

CROPS: Cocoa

The chapter describes and discusses the influence of matrilineal and patrilineal systems in determining women's level of dependency both with the lineage and the household. Two sample groups are compared to determine the way in which allocation of resources and organisation of labour within different systems affect women farmers. Within the cocoa farming matrilineal society men and women developed parallel structures regarding land ownership, employment and utilization of labour although women generally had smaller plots of land, less access to family labour and greater dependency on the use of *abusa* (share-cropping) labourers. Women in patrilineal systems had fewer opportunities for obtaining access to land and seldom inherited property. They were also more dependent on family and hired labour. Women's associations appear to have had only limited success due largely to their highly localized focus and the influence of strong pre-existing class differentiations within each locality.

117. **Venema, B. The Changing Role of Women in Sahelian Agriculture.** Creevey, L. E., Editor. *Women Farmers in Africa: Rural Development in Mali and the Sahel*. Syracuse, New York: Syracuse University Press, 1986. Chapter 4.

COUNTRY: Senegal

The paper describes changes to existing gender based power-relationships brought about by the introduction of cash crops, tools and machinery. State marketing and village cooperatives (from which women are often excluded) are also discussed. It is suggested that mechanization programmes frequently have unexpected side effects due to a lack of understanding of the impact of modernization on complex social systems. Agricultural production is often based on a balanced system of reciprocal rights and obligations within which there is a gendered division of tasks. Men are responsible for food crop production whilst both men and women cultivate cash crops.

118. **Vierstra, G. A., Editor. *Quo Vadit ARPT in Senanga-West?* Adaptive Research Planning Team Western Province State of the art paper no. 2. Mongu, Zambia: Republic of Zambia Department of Agriculture, 1990.**

COUNTRY: Zambia (Senanga-West Region)

CROPS: Maize, millet, sorghum

The paper presents a review of research carried out on the sedentary system in the dryland and small river valley areas of Senanga-West. FHHs were generally reluctant to participate in on-farm trials as the required time commitment was too demanding. However, gender differentiation was noted in the survival strategies adopted, with women generally having a greater requirement for regular sales of small quantities of produce. Beer brewing was used to obtain 'free' labour for ploughing in exchange for a beer party. Cattle have multiple roles including utilisation for draught animal power, however ownership is skewed. Borrowing ensures that most farmers have access to draught animal power, although this may result in delayed planting. Female headed households are particularly vulnerable in terms of access to factors of production. Previous studies indicate that, within male headed households, women invest the majority of their labour in food production (planting, weeding, birdscaring, harvesting), therefore, the availability of female labour within the household is important. Cultural taboos prevent women from handling cattle and FHHs frequently experience deficits in food production, leading to their working as hired labourers on other fields. This in turn exacerbates problems of timeliness on their own fields.

119. **Wekwe, J., and K. Marshall. *Gender Sensitivity within Agricultural Engineering*. Simalenga, T. E., Kayombo, B., and Hatibu, N. *Proceedings of Tanzania Society of Agricultural Engineers (T.S.A.E.) Annual Scientific Conference*. Arusha, Tanzania, 17 Sept. 1991. *Proceedings of T.S.A.E.* 4. , 1992.**

COUNTRY: Tanzania (Mbeya Region)

The paper discusses issues raised through the Mbeya Oxenization Project, concerning the gender sensitivity of agricultural engineering. A breakdown of women's agricultural activities is provided. These include planting, weeding, harvesting and food processing. Changes in labour allocation accompanying the introduction of draught animal power have frequently resulted in the marginalization of women into the subsistence sector. This indicates that gender issues were not fully considered during design, promotion or adaptation of equipment. Where livestock ownership is traditionally male, implements also tend to be controlled by men. Technological innovation creates changes within cultural and social patterns: women are generally experiencing increased demands made on their time for cash crop production, accompanied by increasing marginalisation from the benefits of increased production. The introduction of draught animal power has led to increased labour demands which are reflected in the level of polygyny among cattle owning farmers.

120. **Whitehead, A. *Wives and Mothers: Female Farmers in Africa*. Adepoju, A., and Oppong, C., Editors. *Gender, Work and Population in Sub-Saharan Africa*. London: James Currey, 1994. Chapter 3.**

COUNTRY: Sub-Saharan Africa

A broad historical framework is used to describe the role of women in smallholder production, problems associated with data collection on women's agricultural activities and the effects of

recent development projects. The author criticizes simplistic distinctions between male and female and cash crop and subsistence agriculture, emphasizing instead the complex inter-relationship between different systems and rural economic change resulting in varied patterns of agricultural development. Polarization between groups of women who have, and have not, benefited from changing distribution of resources and the more general marginalisation of FHHs is also considered. Using specific examples drawn from north-eastern Ghana the influence, on their economic activities, of women's productive and reproductive roles within the household is discussed. It is suggested, however, that economic change has resulted in an alteration of the various components of women's economic roles. Contradictory pressures have arisen which make it difficult for women to farm independently although it is increasingly important for them to be able to do so. Women's obligation to provide unremunerated labour, together with their increasing separation from control of income has become a source of intra-household conflict. In conclusion it is argued that the planning process should contain more effective conceptualization of the household, gender division of labour and the economic effect upon women of their dual productive and reproductive roles.

121. World Bank Africa Region. *Women's Crucial Role in Managing the Environment in Sub-Saharan Africa*. Technical Note. Washington: The World Bank, 1991.

COUNTRY: Sub-Saharan Africa

The paper identifies links between gender issues, including women's marital status, and the environment. Women often directly manage natural resources yet are frequently omitted from macro and community level decision making. It is suggested that there are close linkages between soil degradation and food production for household consumption due to institutional or social constraints of access to the resources of production. These are often closely linked to gender defined roles and responsibilities.

122. Zweier, K. *Women Can Handle Draught Oxen Too*. GATE 4 (1986): 17-19.

COUNTRY: Cameroon (North Western Province)

The paper describes problems encountered during a project's pilot phase, particularly the lack of involvement of women. This was consequently seen to be detrimental to their social and economic position. The introduction of draught oxen rendered women's tillage superfluous, integrated men into the production of staple foods, abolished the gender specific divisions of labour, whilst also increasing women's work load in non-mechanized activities (e.g. weeding and reaping) through the extensification of agriculture. Women's independent fields were reduced in size or abandoned, leading to falling incomes and low social status, self-esteem. The quality of households' food was also affected. The main causal factors were insufficient knowledge of sociocultural and socio-economic conditions and low involvement of women during the planning phase. The project was altered to incorporate a special programme for women: offering training, access to credit for draught oxen and implements etc. Women's groups were given preferential access to ox-carts for transport of wood, water, harvested produce, and commercial purposes. As a result, women's integration has increased substantially with women occupying 50% of the management and executive positions.

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This bibliography is the first part of a study of women's participation in agricultural production in the semi-arid regions of Sub-Saharan Africa. The study looks at women's agricultural strategies, especially their use of particular tools and crop production techniques. It focuses on ways in which the use of draught animals affect labour and resource use, and generate increased income differentials at the household and community level. **All in Good Time: Women's Agricultural Production in Sub-Saharan Africa** pulls together existing information on women's crop production, and particularly information on how women presently address critical timing issues.

It will be of interest to all agencies and individuals concerned with development issues especially those relating to women.