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Enhancing gender equality
in the management of
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Front Cover Image

A lady speaker in Zinguinchor, Senegal.

Image courtesy of Angie Rowe © Tostan

Nature & Faune

Enhancing natural resources management for food security in Africa

Volume 29, Issue 1

Enhancing gender equality in the management of Africa's natural resources

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Message to Readers

Bukar Tijani¹

The central theme of this edition of *Nature & Faune* journal is “Enhancing gender equality in the management of Africa's natural resources”. It reviews the situation including achievements and challenges related to adequacy, equity and equality in the roles the two genders play in natural resources management. It is common knowledge that in general, women tend to be the disadvantaged party in many cases. In recent years, gender issues have been at the center of high level consultations in Africa and elsewhere in the world. The recent African Union Summit of Heads of States in Malabo, Equatorial Guinea endorsed the theme of the January 2015 Summit of the African Union as: Year of women's empowerment and development towards Africa's Agenda 2063. Year 2015 also coincides with the Beijing plus 20 Conference which will commemorate the 20th anniversary of the Fourth World Conference on Women in Beijing and review progress in implementing the Beijing Platform for Action. This edition of *Nature & Faune* journal is a contribution of Food and Agriculture Organization of the United Nations (FAO) to these processes, reflecting FAO's strong commitment to gender equality and women's empowerment. You will find short articles highlighting various aspects of how to improve gender equality in the management of Africa's renewable natural resources.

It is important to recognize that there is a role that men can play in strengthening women participation, leading to improved management of natural resources. The fourteen articles featured in this edition seek answers to such questions as “what aspect of natural resources management can be made to function better by engaging both men and women in the most effective ways?” The edition recognizes that in certain aspects of resource management women can do better than men; while in

others, men are better. As depicted in the article on post-harvest fisheries by Yvette Diei-Ouadi, Katrien Holvoet, and Aina Randrianantoandro it is not a zero sum game in which either men or women must lose; it is more a case of men and women together generating much more impact. Practitioners in the natural resources sector recognize these natural attributes and sometimes talk about how to best capitalize on them and to reduce the tendency to either ignore them or to suppress them in dogmatic pursuit of mechanistic equality.

The present issue of the journal carries “success story articles” on gender (Nadia Nsabimbona looks at successful activities and achievements by women in Zimbabwe, Niger and Chad). Articles that remind readers of the critical challenges that need to be addressed are also featured. The articles attempt to inspire all parties involved in resource management by highlighting how we can transform into reality some of the vast potential for Africa's renewable natural resources. Indeed Benjamin DeRidder draws attention to the news unfolding in Lima, Peru, arguing that a focus on gender is unavoidable if we want to achieve effective Climate-smart agricultural transformation in Africa. In the editorial Tacko Ndiaye reviews some of the achievements and challenges in implementing the Beijing Platform for Action since its adoption almost twenty years ago, as they relate to the management of Africa's renewable natural resources.

Ann Degrande and Djalalou-Dine Arinloye in the Special Feature discuss issues surrounding women's participation in agroforestry. Women are often intimately linked to the benefits to be gained from this activity, and the article highlights the challenges they face and cites examples that have enhanced their involvement in management. Their article acknowledges that women's decision making and management power related to production systems is complex and highly context-specific. Despite women's active involvement in diverse agroforestry practices (e.g. management of nitrogen-fixing and fodder trees, domestication of indigenous fruit trees), their level of participation and benefits are often constrained by cultural norms and limited resources.

This viewpoint is corroborated by Susan Kaaria and Martha Osorio in an Opinion Piece. Kaaria and her colleague identify several factors that hamper

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women's participation in rural organizations and suggest strategies to make their participation more effective. These factors include socio-cultural norms, women's multiple workloads, poor access to financial assets, discriminatory legal and policy environment and, last but not least, unequal access to education. They however stress that participation is not an end in itself; it is one of the many ways to achieve the goal of sustainable management of renewable natural resources for food security and environmental sustainability.

Also under the Opinion Piece rubric, we feature Peter Anaadumba and Festus Akinnifesi as they explore the role of South-South Cooperation in expanding Farmer Field School to and across the Africa region, and how their combined use has benefitted smallholder farmers, and women farmers in particular. In a separate piece Professor Anthony Youdeowei attempts to highlight some of the health risks to which smallholder women vegetable farmers, in particular in West Africa are exposed in peri-urban agricultural production.

The tone of this edition seeks to offer a realistic approach to improving natural resource management, rather than being alarmist with an over-exaggerated depiction of the challenges we face. Carefully distinguishing between the nature of the different issues – be they social, cultural, technical or institutional – helps to better understand each situation as exemplified by Roselyne Mwila in her piece on eastern Zambia. Lumping all problems together can be a disadvantage as this conceals clarity and also can make a problem appear too complex to be solved. With this mind-set Tacko Ndiaye and Cheikh Ly directed attention to regional

and global declarations on gender equity in agriculture and natural resources management, including livestock development. In the same vein, Sebastian Grey, Edward Kilawe and Eugene Rurangwa present key considerations, examples and recommendations for the integration of gender equity in agricultural land tenure policies and practices in Eastern Africa. While Nora Berrahmouni and Foday Bojang share their experiences working on the Great Green Wall for the Sahara and the Sahel Initiative (GGWSSI). They underline the opportunity and the potential that the GGWSSI holds to enhancing gender equality in the management of Africa's natural resources. Anja Fasse and Etti Winter shed new light on gender and agroforestry in our Focus Country, Tanzania. They took a snapshot of the country through the lens of agroforestry in the livelihood portfolio of women-headed households in rural Tanzania.

I will leave you with a thought and an invitation about the world's largest and most important gathering of the forest sector – the World Forestry Congress which will be held on 7-11 September 2015 in Durban, South Africa. This is a rare opportunity for women and men in Africa to participate in defining a vision for forests. It is the first time the African continent is holding the World Forestry Congress. The Announcement section has detailed information on the assembly that will be discussing "Forests and People: Investing in a Sustainable Future". This is a good platform to show-case partnership between Africa's women and men working together towards enhancing gender equality in the management of Africa's natural resources.



Editorial

Twenty years after Beijing: have we achieved gender equality in natural resource management in Africa?

Tacko Ndiaye¹

Twenty years ago the Beijing Platform set a comprehensive agenda to “*remove all the obstacles to women's active participation in all spheres of public and private life through a full and equal share in economic, social, cultural and political decision-making*”. It underscored the strong relation between women's livelihood and daily subsistence and their access to natural resources and sustainable ecosystems. It raised a red flag on large-scale deforestation, desertification, drought and depletion of the soil and of coastal and marine resources, pollution and toxic wastes, and unsustainable patterns of consumption and production with detrimental impacts on the environment and on women's health and wellbeing. The Platform stressed the urgency to address gender inequalities in the management of natural resources and in the safeguarding of the environment. We have seized this opportunity to assess for the natural resources field some of the achievements and challenges in implementing the Beijing Platform for Action since its adoption almost twenty years ago.

Over the past decade, there has been a concerted international effort across the multiple and complex dimensions of natural resource management, to ensure that women not only fully benefit from these resources but are also in a position to contribute

effectively to their management. The cross sectoral relevance of gender equality and the enjoyment of women's human rights in natural resources is undeniable as it is for their right to food, housing and health. For instance, women's right to land is inextricably linked to their access to, use and control over other productive resources and assets such as housing, property, water, fisheries, livestock and credit. But in their culturally expected sole responsibility for fetching water and harvesting of firewood and certain other non-timber forest products, women see too much of their time taken up, which leaves little room for them to enjoy educational, training, decent job and income generating opportunities outside of the home. Equal access to and utilization of natural resources, property and inheritance rights are important indicators of women's empowerment, in line with the Beijing Platform for Action (BPFA) adopted in 1995 at the Fourth World Conference on Women in Beijing.

Normative advances in gender equitable natural resource management are widespread, but the pace of implementation has been slow and uneven. In Africa it is structurally important that gender equality and women's empowerment are addressed in managing natural resources such as land, water and forests. The recent African Ministerial Conference on Beijing Plus 20 concluded in Addis Ababa on 17-19 November 2014 reiterated high level political commitment to addressing gender issues in natural resource management. The Conference adopted the Addis Ababa Declaration on “*Accelerating the Implementation of the Beijing Platform for Action towards a transformational change for women and girls in Africa*” which called for the adoption and implementation of laws to guarantee women's rights to land and provision of incentives for women farmers to be stewards of natural resources. The Declaration also addressed women's access, ownership and control over other factors and means of production such as labour, finance, credit, technology, markets and other productive inputs. It stressed the need to facilitate women's effective participation in and benefit from agricultural value chains, which are highly dependent on natural resource management.

With regard to land, Africa is blessed with a strong body of national, regional and international legal frameworks that provide for women to own, use,

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access, control, transfer, inherit and take decisions about land. These also encompass women's rights to secure land tenure and to meaningfully participate in the elaboration and implementation of land laws and policies. The Convention on the Elimination of all forms of Discriminations Against Women, CEDAW, ratified by 51 African countries, protects women from discrimination with respect to matters relating to land, housing and property. The Convention invites State parties to ensure women's right to equal treatment in land and agrarian reforms as well as land settlement schemes.

The Protocol to the African Charter on Human and Peoples Rights on Women's Rights, called the Maputo Protocol, prohibits any form of discrimination against women and promotes equal rights for women and men to land and property. The July 2004 Solemn Declaration of African Union Heads of States on gender equality in Africa calls for Governments to actively promote the implementation of legislation to guarantee women's land, property and inheritance rights. The Sirte Declaration on Land issues and Challenges in Africa adopted during the African Union (AU) Heads of State and Government Summit of July 2009 called for African Governments to *"provide for equitable access to land and related resources among all land users and strengthen the security of land tenure systems for women"*. Land is also a key dimension in the 2010 – 2020 Africa Decade for Women. Various countries have enacted land laws that address gender discrimination in land ownership. This is exemplified by Ethiopia, Rwanda and Uganda in their efforts to formalize land holdings through joint land titling and registration thus providing husband and wife with equal secure rights to land, or to secure and equal land inheritance rights for women and men.

However, 20 years after Beijing, women still face structural barriers to full enforcement of their land tenure rights ranging from inadequate legal standards and implementation at national and local levels, to patriarchal and cultural norms and attitudes, the co-existence of customary and legal systems on land tenure, difficult access to information on land rights, and accessibility and affordability of land administration services and justice systems. For instance, FAO research has shown that gender disparities in land holdings in sub-Saharan Africa show a range varying from women holding less than 5 percent of land holdings in Mali to over 30 percent in countries such as Botswana, Cape Verde and Malawi (FAO, The State of Food and Agriculture 2010-2011).

The situation has worsened with the phenomenon of land-grabbing across the continent, thus making land scarcer and depriving women from their land rights, while compensations for grabbed lands are usually paid to men as land title owners. Land ownership is also often associated with recognition as farmers. Without this recognition women have greater difficulties in accessing other services important for food production such as extension services and credit.

In the area of **water**, limited access to safe water for households and for use in agricultural and other production remains the prime challenge for Africa. For instance, it is estimated that nearly 51 percent (300 million people) in sub-Saharan countries lack access to a supply of safe water, with rural areas being the most affected. The proportion of rural households within 15 minutes from a source of drinking water is as low as 8 per cent in Eritrea, 15% in Somalia and Uganda and 25% or less in Burkina Faso, Burundi, Democratic Republic of the Congo and Mozambique. But the limited water is not equitably accessed by men and women and its collection is primarily a burden on women, which limits the time they can devote to improve their condition and status. To address this, the African Ministerial Council on Water (AMCOW) developed its Policy and Strategy for Mainstreaming Gender in the Water Sector in Africa¹ in 2011, as part of the African Union's efforts to support gender mainstreaming within development. Building on various legal and policy frameworks that have prominently addressed gender issues in water, the policy provides a guiding framework to AMCOW, AU member states and other stakeholders, to mainstream gender in their water related policies, programs, actions and investments. The African Water Vision 2025² also calls for an *"equitable and sustainable use and management of water resources for poverty alleviation, socio-economic development, regional cooperation, and the environment"*³. The Vision sets various targets with regard to gender responsive water resource management and women's participation in decision making processes: 30% of national water policies should mainstream

¹ http://www.amcow-online.org/index.php?option=com_content&id=274&Itemid=143&lang=en

² http://www.netssaftutorial.com/fileadmin/DATA_CD/05_Statep5/SF28_African_Water_Vision_2025.pdf

³ http://www.netssaftutorial.com/fileadmin/DATA_CD/05_Statep5/SF28_African_Water_Vision_2025.pdf

gender issues by end of 2005 and 100% of national water policies should be gender sensitive by 2015.

Obviously, we are very far from reaching these targets. Often, water scarcity has meant that women and girls are deprived from their rights to education, health and economic opportunities due to the heavy workload and time required to fetch water. Furthermore women remain largely marginalized in decision making processes related to water governance. Social and gender analysis conducted at the level of community water source, the sub-basin level, or micro-water shed level can help in understanding the problems and potential impact of water policies on different groups of women and men. Community water sources, whether natural or man-made lakes, ponds and irrigation schemes, serve many purposes, including fishing, agriculture, horticulture and sanitation. The use and management of these resources are strongly related to gender.

Time poverty is another challenge undermining gender equality and women's empowerment in Africa. Time is one of the most critical assets for women's empowerment due to its strong impact on their ability to access education and training, paid employment and income generating activities compared to men. Women and girls carry the greatest load in providing water and firewood to their households. According to UN Water¹, 90% of the workload related to water and firewood collection is performed by women and girls in Africa. Women and girls spend up to six hours fetching water every day. This means that too many girls are deprived of education and training opportunities due to lack of time, and consequently are unable to secure decent employment in the future. This perpetuates their poverty and disempowerment.

Lack of sex disaggregated data and gender sensitive indicators on natural resource access, management and use is an important challenge to measuring disparities, establishing baselines, monitoring progress and designing gender responsive policy and programmatic responses.

For instance, a review of available data on land ownership has shown that only 6 out of the 14 African countries which carried out an agricultural census during the World Census of Agriculture 2010 collected sex-disaggregated data (SDD) of parcel/plot manager (Burkina Faso, Malawi, Mozambique, Niger, Togo and Uganda). Even when SDD is collected, it is often neither analyzed nor used to inform policies.

Glaring gaps exist between high level political commitment to gender equality or equity in natural resource management as articulated in the various legal and policy frameworks described above, and their translation into actions. Clearly, it is time to act at a transformative scale, through land, water and forest policies and implementation mechanisms that take cognizance and address women and men's differentiated constraints in accessing natural resources and securing their tenure rights. This involves ensuring access to services and technologies that are key for sustainable management of renewable natural resource.



¹ www.unwater.org

Special Feature

Gender in Agroforestry: Implications for Action-Research

Ann Degrande¹ and Djalalou-Dine A. Arinloye²

Summary

Women in sub-Saharan Africa are major contributors to the agricultural economy, but their lower access than men to productive resources and opportunities, limits them from achieving optimal production. This paper gives a snapshot of issues surrounding women's participation in and benefits from agroforestry, challenges that women face and examples of opportunities to enhance their involvement. First and foremost, we acknowledge that women's decision making and management power related to production systems is complex and highly context-specific. Despite their active involvement in diverse agroforestry practices (e.g. management of nitrogen-fixing and fodder trees, domestication of indigenous fruit trees), their level of participation and benefits are often constrained by cultural norms and limited resources. Agroforestry value chains are particularly important for women's income, but again low access to capital, technology and information, constrains women from developing their enterprises further. Moreover, women's roles in value chains are often poorly supported by policymakers (in the design as well as in the implementation of policies) and service providers. Interventions to help smallholders improve the marketing of tree and agricultural products have not always had positive effects on

women, because when the business becomes more profitable, men often tend to take over. One of the major challenges for agricultural development, however, remains women's low access to extension services. Profound reforms in African extension systems from a centrally-controlled, top-down approach to a more participatory and pluralistic system, are expected to improve women's access to agricultural information and services. The paper ends with some recommendations in the field of technology, policy and institutions, to enhance women's participation in and benefits from agroforestry, and agriculture in general.

Why does gender matter?

Internationally, it is now recognised that addressing gender imbalances holds the potential to decrease poverty and food insecurity in Africa, while delivering environmental services and mitigating climate change. In the book "Challenging Chains to Change" (KIT *et al.* 2012), the important gender dimension of poverty is acknowledged for two basic reasons. The first is that it is a matter of human rights. Although women and men both contribute to and benefit from rural development, women still lack legal and property rights, as well as access to land, finance and modern business practices. Second, it is a matter of improving agricultural business. Gender inequality produces inefficiencies; when half of society is under-mobilized or excluded, this represents a lost opportunity for development and for business.

Women in sub-Saharan Africa are major contributors to the agricultural economy, but face various constraints that limit them from achieving optimal production and agricultural development. Research has shown that in many contexts, women have less access than men to productive resources and opportunities such as land, labour, education, extension, financial services and technology (Doss 2001; Mehra and Rojas 2008). In addition, women have low decision making power when it comes to issues of household income allocation, livestock and cash crop production and marketing, and water management, and this is often rooted in cultural and social norms (Akeredolu *et al.* 2007).

This paper gives a snapshot of issues surrounding women's participation in and benefits from agroforestry. Major challenges that women face in agroforestry are highlighted, but there are also

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examples of opportunities to enhance their involvement. Finally, some recommendations for technology, policy and institutional interventions are formulated.

Gender and household decision-making

The complexity of decision making and management powers of women related to natural resources management and crop-tree-livestock production systems was illustrated in a study on the role played by and place reserved for women in natural resources management in the drylands of Mali, Nigeria, Niger and Ghana (Sissoko *et al.*, 2014). The authors showed that, overall, women have very little control over marketing decisions, except in Niger where women were found to control cash crop marketing (*i.e.* millet, cowpea and sorghum). Likewise, in Ghana, staple food crop marketing was under the control of women. However, being in charge of marketing does not necessarily mean that women have equal control over the income generated from the sales. The study highlighted that women in Ghana choose the markets for selling, bargain the prices with the buyers, but then return generated income to the male household head after transactions. Nevertheless, as far as distribution of decision making power between men and women in the household is concerned, Sissoko *et al.* (2014) demonstrated high variability according to the type of decisions, and important differences between countries and ethnic groups, suggesting that there is need to for a context-specific understanding of women's decision making powers.

Gender and agroforestry practices

Agroforestry systems are not gender-neutral. Both female and male farmers are an integral part of agroforestry systems — As a matter of fact, women are habitually responsible for managing trees, especially at the early stages of establishment. Women often have highly specialized knowledge of trees and forests in terms of species' diversity, management and uses for various purposes, and conservation practices. However, compared with men, women's needs and priorities are not always

adequately addressed, for a range of interrelated cultural, socio-economic and institutional reasons. One of the major obstacles to the adoption of agroforestry by women is limited access to land. In a survey carried out in 16 African countries, women are as likely to own land as males in only six countries and only 2% have land titles (Croppenstedt *et al.* 2013). Also, female headed households have generally less land than male headed households. As regards tree tenure, men and women have separate rights to different parts of the tree; however, women's rights are mostly confined to secondary products of no significant economic importance, such as branches, fodder and often indigenous fruits. Whenever such 'by-products' become valuable, they are usually taken over by men.

Kiptot *et al.* (2013), in their review on the contribution of gender and agroforestry to food security in Africa and the imbalances that exist, concluded that women are as actively involved in agroforestry as men. However, the level of participation and benefits of women are constrained by cultural norms and lack of resources.

One of the agroforestry practices that Kiptot *et al.* (2013) examined was the use of nitrogen-fixing trees for soil fertility improvement. A review of 10 studies undertaken in Kenya, Zambia, Uganda and Malawi on the adoption of such trees showed that women farmers were as actively involved as their male counterparts, suggesting that the use of these trees for replenishing soil fertility is gender neutral. However, women in Zambia had smaller plots of nitrogen-fixing trees than men, possibly because of the heavy workload that women bear, land constraints or risk aversion.

Estimates on the use of fodder shrubs, an agroforestry practice promoted in East Africa for increased milk production, showed that 47 % of planters were women (Kiptot *et al.* 2013).



Nevertheless, in Tanzania and Uganda, only 39.8 % of the income from milk was managed and controlled by women. Furthermore, increasing formalisation of the milk markets is likely to further erode the traditional female control of milk and its by-products, thereby decreasing their power to allocate money autonomously within the household. Other benefits from fodder shrubs, however, directly benefit women, such as improved nutrition of the family, and the production of fuelwood, high quality manure and stakes for vegetable production. Growing fodder shrubs on-farm also often reduces the amount of fodder that has to be collected off the farm. This agroforestry practice thus frees up time for women, who are usually responsible for fodder collection; time which they can now dedicate to food preparation, child care and productive activities such as vegetable growing, small livestock husbandry, food processing, etc.

Lastly, the fact that women's participation in indigenous fruit enterprises in sub-Saharan Africa is much greater than for exotic fruits, holds great prospects for the domestication of indigenous fruit trees as a way to addressing gender imbalances and achieving household food and income security. Traditionally, women have been the primary domesticators of forest-based food and medicinal plants that are now found in home gardens around the world (Kumar and Nair 2004). While men may be the nominal owners of trees, women are often responsible for the marketing of fruits and, importantly, are often able to decide how the resulting income is used (FAO 2013). Nevertheless, women's participation in tree domestication has been hindered by limited access to and control over land and trees, insufficient information on the requirements and advantages of tree domestication, and substantial periods of production inactivity due to the childbearing and childrearing roles of women and their heavy workloads in the household

(Degrande *et al.* 2007). Compared with single women and widows, married women are generally more knowledgeable about and involved in tree domestication because they tend to have easier access to information, land and labour via their husbands (*op. cit.*).

Gender and agroforestry value chains

Gender categories have differentiated tasks and responsibilities in tree and crop management, harvesting, processing and marketing. Women therefore tend to play specific roles in agroforestry value chains. These are important in income generation, and in turn for the well-being and food security of households. However, women's roles in value chains are generally poorly supported by policymakers and service providers. Women face particularly constraints in marketing, such as: lack of capital, poor market infrastructure, high cost of transportation due to poor road conditions and theft of their products and money at the markets (Yisehak 2008). Other constraints include lack of appropriate technology and limited access to processing technologies, marketing strategies and market information (Degrande *et al.* 2014). Also, when agricultural products are marketed through organized groups, such as cooperatives and associations, women tend to lose out because membership is predominantly male (Kergna *et al.* 2010). Moreover, most of the women's associations in rural areas are traditionally led or dominated by "invisible men's hands", either husbands or village chiefs.

Ingram *et al.* (2014) argued that enhancing women's benefits requires, firstly, recognising the informal and often policy-invisible nature of forestry and agroforestry value chains and people working in them, the gendered nature of forestry and agroforestry products and activities in value chains, and the sources of gender differences, such as customary governance arrangements concerning

access to species and markets. Many research and development organisations have used various approaches to help rural dwellers, and particularly women, improve commercialisation of tree and agricultural products. These include capacity building in business skills and assessing market trends, promoting product specialization, and improving processing. Other strategies comprise of making available improved storage methods, encouraging farmers to organize themselves in producer groups and embark on common group sales to traders, and facilitating village-level stabilization funds by which producers receive advance payment for part of their produce. This allows them to keep the product for off-season sales, because they are no longer obliged to sell immediately after harvest to meet urgent cash needs.

There is an increase in contract farming and outgrower schemes to ensure availability of high-value crop and tree products, through which farmers seek to ensure a steady supply of quality produce and income. Evidence (FAO 2012) shows that female producers are largely excluded from contract-farming arrangements because they lack secure control over land, family labour and other resources required to guarantee delivery of a reliable flow of produce.

Gender and agroforestry extension

According to FAO (2011), women are able to access only 5% of the agricultural extension services that men access. Sulaiman and Kristin (2012) reported that the percentage of women working in agricultural advisory services was 15 % worldwide and only 11 % in Africa. Extension systems have, however, undergone profound change during the last 20 years in many countries, from a centrally-controlled, top-down approach to one that encourages many different organizations to interact with farmers as equal partners. This is expected to positively affect women's access to agricultural information and services. For example, small, locally based organizations have an advantage in recruiting female field staff members for a number of reasons. The terms of employment for women in such organizations, as relates to pay, support and ability to work near their residential communities, can be more attractive than when working with governmental services, which may require that women relocate to remote rural areas far from their homes and families. Furthermore, involving farmers directly in some extension activities might possibly make extension more accessible and relevant to different categories

of farmers, and more gender-sensitive as well. One of such approaches is the farmer-to-farmer extension (F2F) where farmer trainers or "lead farmers" share their knowledge and experience with other farmers, and often conduct agricultural experiments on their personal farms as well. A study on the performance of F2F extension in Cameroon (Tsafack *et al.* 2014) showed that F2F programmes were able to achieve a higher proportion of women's involvement as farmer trainers (37%) than that found among extension staff (28%). While the number of farmers trained was not significantly different between female and male lead farmers, female "lead farmers" trained more women proportionally than their male fellows (74%, against 41% of trainees being women).

Another alternative to publicly-run agricultural advisory services under development in Cameroon is the rural resource centre concept. Rural resource centres (RRCs) are venues located in rural areas and run by community-based organizations, where farmers come for information, training and demonstration of new agricultural practices in general, but particularly on agroforestry. Experience has shown that rural resource centres can reach large numbers of women and young people who may be overlooked in traditional extension systems. In fact, 38 % of people associated with RRCs in Cameroon were women and 30 % were younger than 35 years. Of the 1927 farmers trained by RRCs between 2010 and 2011, 41 % were women and 43 % were younger than 35 years (FAO 2013). Eboutou (2013) found that women had different perceptions on the role rural resource centres should play in their communities than men. Women placed more emphasis on technical backstopping on a regular basis, while men thought that sensitisation, training and production of planting material should be the main activities of RRCs.

Conclusion and recommendations for way forward

Agroforestry, like other agricultural production systems and natural resource management practices, are not gender-neutral. The examples described in this paper clearly show that, across Africa, women participate as actively as men in diverse agroforestry practices. Moreover, women tend to play a dominant role in some specific domains such as indigenous fruit enterprises and often derive an important share of their income from agroforestry value chains. Yet, in most instances, they have less access than men to productive resources, technology and services, which

limits them from developing their activities and enterprises further.

From the above and in accordance with Manfre *et al.* (2013), we conclude that enhancing women's participation in and benefits from agriculture in general and agroforestry in particular, must necessarily involve technology, policy and institutional interventions. They include, among others:

- Enhancing the understanding of intra-household decision making and women's choice and management powers, especially related to household income allocations, in different social, political and economic settings (Sisokko *et al.* 2014).
- Targeting particularly enterprises which are managed and controlled by women, e.g. domestication of local agroforestry species (FAO 2013).
- Using various approaches to help women improve their participation in agroforestry value chains, such as: capacity building in business skills and assessing market trends, promoting product specialization, improving processing technologies and storage methods, organizing producers in producer groups for collective sales, and facilitating village-level stabilization funds to allow for off-season sales (Degrande *et al.* 2014).
- Training and recruiting more women extension officers, and promotion of complementary community-based approaches to bring rural advisory services closer to male and female farmers (Kiptot *et al.* 2013; Tsafack *et al.* 2014).
- Ensuring that extension activities address a range of different interest groups. For example, women are more interested in products such as fruits, fuelwood, and vegetables, while men are more inclined towards managing trees for the production of timber and poles (Kiptot *et al.* 2013).

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Opinion Piece

Women's participation in rural organizations: Why is it important for improving livelihoods and sustainable management of natural resources?

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Summary

Rural organizations, including farmers' organizations, forestry groups, water user groups and community based groups, are essential institutions for the empowerment and advancement of poor rural men and women. These organizations can help rural men and women overcome poverty by facilitating their access to resources, assets, markets, services, information and knowledge. Through collective action these organizations play an important role in improving sustainable management of natural resources, strengthening the political power of farmers, and increasing the likelihood that their needs and priorities are heard and addressed by policy makers. However, evidence shows that compared to men, women are often under-represented in rural organizations and therefore are often excluded from the benefits and services they provide. This paper draws on experiences from Africa, South Asia, and Latin America to address the following questions: How does women's participation in rural organizations affect the management of natural resources? What factors hinder women's participation in these organizations? Which factors facilitate and enhance women's participation in rural organizations?

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The paper identifies several factors that hamper women's participation in rural organizations: socio-cultural norms; women's work burden; access to assets and resources; the legal and policy environment; and access to education and information. At the same time, the paper sheds light on some of the strategies that can be used to promote women's participation in rural organizations, including: (i) Capacity development of men and women at the individual and household level. (ii) Building effective and gender-equitable formal and informal rural organizations. (iii) Putting in place an enabling policy framework that systematically promotes women's participation in rural organizations and adopts specific measures for its implementation.

Introduction

The State of Food and Agriculture 2014 report (FAO 2014) highlights the important role of rural organizations in enabling family farmers to access input-output markets, engage effectively with other actors in the innovation system, and have influence over the social, economic and political processes affecting them. The report provides evidence that men and women receive significant benefits from membership in rural organizations. In addition, a recent study (OXFAM 2014) found that participation in groups led to significant economic benefits for women members in Mali, Tanzania, and Ethiopia: group members were more productive, their products were of higher quality and they therefore received better income from sales; and, membership also improved women smallholders' access to credit and market information. Similarly, the World Bank Report (2014) and IFAD Rural Poverty Report (2011) also find that collective action, through membership in groups, can enhance women's voice and reduce gender disparities.

There is also evidence that women's participation in forestry groups and water users groups can play an important role in enhancing natural resource management.

Findings from Agarwal (2001) and Coleman and Mwangi (2013) clearly show that women's participation in decision making of forest institutions can reduce conflict within forest user groups and help these groups to achieve better results, such as ensuring forest health and socially equitable benefits

from forest resources. Agarwal (2001) reports that women's inclusion in decision-making of forest user groups in South Asia, reduced tendencies for rule breaking by those not previously engaged in formulating the rules, in particular women. Similar benefits have been reported for women's participation in water user groups. Meinzen-Dick and Zwartereen (1998) found that greater involvement of women in water user associations in South Asia, strengthened the overall effectiveness of irrigation management. In addition to improved natural resource management, there is evidence that the active participation of women in the decision making processes in rural organizations can lead to decisions that better respond to women's priorities and constraints. The involvement of women in forest governance can help ensure that forest policy and planning is more sensitive to the food security needs of the community (Stloukal et al. 2013).

What factors hinder women's participation in rural organizations?

Despite the benefits accruing from participation, there is evidence that rural organizations can at times exclude poor, less educated, or otherwise marginalize women. FAO (2014) report provides evidence of substantial gender disparities within most farmers' organizations, natural resource management groups and other community-based organizations. Other studies show that rural organizations do not always represent the interests of those most marginalized and that often women and youth are excluded from leadership roles, decision-making processes and the services they provide (Agarwal, 2001; Gotschi et al. 2009; Tanwir and Safdar, 2013). Various authors and researchers have identified five factors as major impediments to women's participation in rural organizations: socio-cultural norms and perceptions; women's double burdens and triple roles; lack of education, training and access to information; access to assets and resources; and, rules of entry and the legal and policy environment. The section below elaborates on some of these factors:

Socio-cultural norms and perceptions: Social and cultural norms determine the role that women and men play in society, community and within the household, and may limit women's participation in rural organizations. For example, in many cultures, women may be discouraged from participating in rural organizations as social norms may dictate that men are the ones who should represent the family in these

organizations (Massolo, 2007; Meinzen-Dick and Zwartereen, 1998). Other authors have found that married women have restricted mobility and possibility to engage in extra-household activities and are not allowed to participate in groups without the permission of their husbands (Gotschi et al., 2009).

Women's double burdens and triple roles: The multiplicity of roles and household workloads of women reduces the time they have for participation in rural organizations. This time burden may thus prevent women from actively participating in rural organizations and in development activities (FAO 2010-2011) and this is particularly true when meetings and service provision interventions are designed overlooking women's time and mobility constraints. As a result, women may choose not to join rural organizations or they may not be able to attend many of the meetings nor take advantage of related training or extension opportunities.

Access to assets and resources: FAO (2010-11) provides evidence that compared to men, women on average control less land, use fewer farm inputs and have less access to extension services. Limited access to assets, land and income may decrease women's bargaining power in and outside the household and, therefore, hinder their possibilities to join and influence decisions of rural organizations, especially when membership rules may require asset ownership such as land for cultivation or income to pay membership fees (Agarwal, 2001; Wiig, 2013; Pandolfelli et al., 2007). For example, Meinzen-Dick and Zwartereen (1998) found that in Sri Lanka, only those holding formal rights to irrigated land could become members of water user associations. Since men tend to have the legal rights over land in Sri Lanka, most women are not eligible for membership.

Education, training and access to information: In their work on forest user groups, Coleman and Mwangi (2013) found that because women tend to be less literate and have less education than men, they were less likely to participate in forest groups. They also found that women's participation in forest management institutions was affected by individual characteristics, such as education and wealth level. Finally, the lack of access to information on rural organizations and

their activities – which is generally more common amongst women with limited or no education – was also an important constraint reported by Agarwal (2001).

Legal and policy environment: The legal, policy and institutional environment can have a negative impact on women's participation in rural organizations, especially when some of the existing laws and policies do not pay attention to gender. For example, in analyzing how the policy and legal environment affects women's participation, OXFAM (2013) found that even in countries where the provisions in the cooperative law overtly support (gender) equality of membership and benefits, a strong push by government to 'formalize' groups may exclude women. This is because women prefer to be members of informal groups. In Uganda, Mangheni and Sseguya (2004) found that despite the existence of a gender sensitive national policy and legal framework, if women's participation was not explicitly mentioned in the by-laws and other policy instruments of rural organization, the participation of women remains limited.

Which strategies can promote women's participation in rural organizations and therefore improve the sustainable management of natural resources?

The lessons provided in the previous section clearly demonstrate that proactive measures are needed to foster the effective participation of women in most rural organizations. This section highlights interventions and provides practical examples and actions at the individual, organizational, and aggregate policy levels, for achieving that.

Strategies targeting individuals at the household level

Increasing women's self-confidence through capacity development is fundamental to increase their level of membership and participation in leadership positions. A study in Mozambique, Penrose-Buckley (2007) found that increasing literacy and providing basic numeracy skills, directly translated into increasing women's confidence and ability to participate in rural organizations. Similar results were reported by Coleman and Mwangi (2013), who found that when women had more years of schooling, their probability of participating in rural organizations and attending meetings was higher.

FAO Dimitra Community Listeners' Clubs have shown to be successful in strengthening the self-confidence of men and women to self-organize and to participate in development interventions (FAO-Dimitra, 2011). Through a participatory communication approach based on Community Listeners' Clubs, these clubs contribute to increasing the visibility of rural women as agricultural producers, facilitate their access to information and increase their economic and social empowerment.

Establishing gender-equitable rural organization

It is important to develop specific measures to ensure that rural organizations are gender equitable. These are organizations in which the rules, structures and practices ensure that women and men can equally participate and benefit. For instance, not restricting membership to one member per household, establishing minimum quotas for female membership, and setting low membership fees, are some of the measures that can be adopted for boosting women's active involvement in the organizations.

For example, Farnworth (2012) reported that an organization in Uganda increased women's participation in the cooperative by offering them a higher share of the dividends and reduced membership fees. These measures motivated many men to bring their spouses into the organization. Likewise, OXFAM (2013) and Agarwal (2001) demonstrated that female participation in cooperatives that allowed both husband and wife to become members, had more women members, in Ethiopia and India, respectively. In another example, Kuapa Kokoo Farmers Union in Ghana successfully incorporated women at all levels of the union, as a result of enforcing quotas for female participation (Tiffen 2014). In addition, FAO's Water Passport (FAO 2012) provides clear guidelines on how to promote the participation of women in Water Users Association (WUA) and how to involve men and women equally in the decision-making in water management and maintenance.

Creating an enabling environment for gender-equitable rural organizations

While measures and strategies at the individual and the organizational levels are essential, they need to be embedded in an enabling environment that systematically promotes women's participation in rural organizations and that adopts specific measures for its implementation. This includes creating a policy and legal framework that promotes gender equality principles in national cooperative laws and other

related legislation. For example, on recognizing the poor representation of women in agricultural cooperatives, the Philippines Government has recently instituted a policy that promotes gender equality in rural organizations. The policy includes specific elements for promoting gender balance in membership and in the board or leadership of cooperatives (FAO forthcoming).

In addition, because women may not always participate in formal groups, it is also important to create an enabling environment for existing (women's) informal groups. This includes identifying policies that support 'alternative' and flexible group structures with limited or reduced registration costs (Baden 2014). Governments can enact appropriate legislation and regulatory frameworks to ensure rural organizations enjoy the right and freedom to operate, with particular incentives for rural women to organize themselves (Penunia 2011).

Finally, a key recommendation of IFAD's Farmers' Forum in 2010 (IFAD 2010) was the importance for governments to develop mechanisms to promote women's participation through affirmative action. For example, according to the Farmers' Forum, quotas can help establish a necessary critical mass of women members and thus increase their visibility and voice. The advantages for establishing 'quotas' is supported by evidence from a number of studies. For example, a study carried out by Agarwal (2010) in India and Nepal demonstrates that a critical mass is needed to promote meaningful participation of women in rural organizations. She also finds that the higher the percentage of women in mixed gender groups (beyond 30%), the greater the likelihood of women attending meetings, speaking up at the meetings and holding office.

Conclusions

Rural organizations are crucial in providing their members with access to resources, assets, markets, services, information and knowledge. However, in many instances rural women's participation in these organizations is limited. Evidence indicates that specific strategies need to be in place to promote women's participation, including: increasing women's self-confidence and building their capacity to participate and lead; strengthening the knowledge and skills of rural organizations to systematically integrate the needs and priorities of men and women; and creating an enabling policy and legal framework that systematically promotes women's participation in rural organizations and that adopts specific measures to this effect. Finally, successful strategies for

promoting women's participation in rural organizations need to simultaneously tackle the existing constraints at the individual, organizational and policy level.

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Linking Farmer Field Schools and South-South Cooperation to empower African women

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Summary

The Farmer Field Schools (FFS) is a widely known grassroots extension and education approach worldwide, and relies on the use of experiential learning in groups to strengthen capacity of rural farmers in decision making, problem solving and learning new skills and techniques, and facilitating farmer-to-farmer training. Likewise, South-South cooperation (SSC) is gaining increasing attention as a cost-effective mechanism for sharing key development solutions among countries in the global South. It is based on the premise that much of the capacity, knowledge, technology and resources, and other development solutions required to achieve development impact at scale already exist in developing countries, but need to be shared, adapted and scaled-up. With concrete case studies this article explores how combining FFS extension approach, with farmer-to-farmer SSC is empowering women in Africa.

Introduction

The Farmer field Schools (FFS) is a widely used approach around the world to share practical agricultural knowledge, develop skills and empower farmers. It is a form of non-formal adult education and experiential learning principles, where, the farmer's field is the class room for experiential learning-by-doing and reflection. Farmer field Schools usually comprises of farmer groups (elderly men and women and the youth), with a common interest, who meet regularly over a production season to jointly identify solutions to local challenges through

participatory farmer experimentation and co-discovery. The details of how FFS works and its adoption around the world has been well documented (Davies et al, 2010; Waddington et al, 2014).

South-South Cooperation (SSC), as an innovative cooperation model, is currently reshaping the development cooperation architecture and overcoming the flaws of predominantly supply-driven forms of technical cooperation. Contribution of SSC to food security and nutrition, gender participation and youth employment has been reported elsewhere (Akinnifesi et al, 2013). Although both SSC and Farmer Field School (FFS) have been promoted as instruments for knowledge sharing and farmer empowerment, there is limited evidence of their combined use to impact on food security and gender equity. This article explores the role of South-South Cooperation (SSC) in expanding FFS to and across the Africa region, and how their combined use has benefitted smallholder farmers, and women farmers in particular.

Spread of Farmer Field Schools from Asia to Africa

It is indeed a double coincidence that both SSC and FFS have their origin in Indonesia. Historically, SSC was birthed during the Afro-Asian Conference in Bandung Indonesia in 1955. Likewise, the Farmer Field School (FFS) started from a small pilot program in Indonesia and has spread to global scale. The FFS approach was initially developed for training rice farmers on integrated pest management in Asia in 1990s, to improve farming skills and raise smallholder farmers' awareness of alternative to toxic chemicals, but has been introduced to West Africa in 1996, and more recently it has been adapted to soil productivity improvement in East and Southern Africa. Experts and technicians were deployed from Indonesia and the Philippines to Ghana as "master trainers." The (trainee) facilitators came from Mali and Burkina Faso. Intra-Africa SSC has been a major component of the programme whereby masters trainers from FFS-experienced countries were brought to new countries to help initiate the first full season of training of facilitators. For example, master trainers from Mali travelled to the border of Northern Eastern Guinea to conduct training for facilitators there. Similarly, master trainers from Senegal went to Mauritania, and master trainers from Benin went to Niger to train their fellow FFS trainee farmers.

Between 1995 and 1996, five young Kenyan extension workers were sent to the Philippines to

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attend 3-months season long FFS Training of Facilitators courses. This would later become the starting point of a very large expansion of the FFS approach in East Africa. These trainers and their trainees have since facilitated more than 200 Training of Trainers' events in 15 countries. In 1997, a large scale integrated production and pest management program was launched for smallholder organic cotton farmers in communal and resettlement areas of Zimbabwe using the FFS approach. The expansion of FFS continued into Mozambique in 2001 when FAO facilitated farmer-to-farmer knowledge sharing between Zimbabwe and Mozambique in the province of Zambezia.

FFS approach has proven to be a participatory and effective way of empowering and transferring knowledge especially to women farmers (FAO, 2011).

For instance, in order to ensure proper gender mainstreaming the Indonesia Integrated Pest management (IPM) project introduced the gender field schools, which became the basis for ensuring for ensuring equal participation for both male and female. The approach allowed participants to follow five basic steps in understanding gender issues in their communities (Mansour, 2003), including:

Box 1. Five steps to mainstreaming gender in FFS

- Step 1.** Diagnosis. Undertaking gender training to raise awareness of gender issues and enable farmers to conduct participatory gender research;
- Step 2.** Data Collection. The farmers use their training to identify gender issues in the farmers household and community and collect data on these issues. The data collected are grouped into five categories:
access;
participation; control; benefit; burden and level of violence.
- Step 3.** Gender Analysis. The facilitator helps the farmers analyse the data collected and to understand the way local perceptions of gender affect women's lives.
- Step 4.** Action plan to reduce and eliminate the identified inequalities between women and men.
- Step 5.** Monitoring and evaluation. This helps to identify the activities that will increase women's access to, control over, and benefits from the IPM programme, and expand women's participation in farmers organisations, programmes and processes.

Source: Mansour, 2003.

The Indonesia Farmers Fund and South-South Cooperation

Although SSC had long been undertaken in FAO as part of the Technical Cooperation among Developing Countries (TCDC), however, it was not until mid-1980s that a major SSC project began. The first major historical milestone began in FAO 30 years after the Bandung Conference. When massive famine and severe drought hit sub-Saharan Africa in the mid-1980s, the smallholder paddy rice farmers in Indonesia were determined to help their fellow African farmers meet their food challenges by sharing their resources, knowledge, skills and expertise and technologies, in the spirit of South-South farmer-to-farmer solidarity.

In the mid-1985, mobilised by a producer organization known as Indonesian National Progressive Contact Farmer's and Fishermen's Association, KTNA (*Kontak Tani Nelayan Andalan*), with 8 million membership consisting of 200,000 farmer groups, each group comprised of 35-40 farmers donated around 13 to 15 kg of dry milled paddy rice each, totalling 100,500 metric tonnes (Shallon et al, 2003). The money from the sale of the rice totalling USD \$ 8.6 million (including accrued interests over the years) was donated to FAO to set up the Indonesian Farmers' Fund (IFF). Managed by FAO, the IFF was instrumental to the implementation of several noteworthy early SSC projects and initiatives in Africa that focused on empowering women. In its first phase (1985-2003), the IFF supported about 80 projects in 24 African countries, and was used to establish two Farmer Training Centers: one in Gambia and the other in Tanzania. The second phase (2004-2011) was implemented through bilateral cooperation between Indonesia-Tanzania and Indonesia-Gambia (Dinur et al, 2013). Following this Indonesian-African SSC, what had once been perceived as a mere old slogan was given a new meaning and relevance.

Indonesian Farmer's Fund, Farmer field Schools and Gender Equity

The Indonesia-Africa SSC facilitated by FAO, aimed at increasing self-sufficiency in food for African farmers, especially women, through capacity development interventions in areas of agricultural production, small-scale fisheries and reduction of post-harvest losses. The Indonesian Farmer's Fund (IFF) was particularly targeted to benefit more rural women farmers and fisherfolk. The following four key areas of support were used by the IFF:

- a) *Farmer-to-farmer apprenticeship.* A two-month farmer's apprenticeship program enabling African farmer couples to benefit from practical learning experiences in rice production practices from their fellow Indonesian host farmers. They stayed in their Indonesian host farmers' houses for five weeks and the rest at Agricultural Training Centers. This farmer-to-farmer learning and knowledge sharing was complimented with practical structured training in Indonesia. Between 1990 and 1999, about 261 participants from 21 African countries in 19 batches participated in apprenticeship program in Indonesia. Each batch included a total of 10-20 persons (average 17 persons), including five married farmer couples, five young farmers and 2 government officials (Dinur et al, 2013; Shallon et al, 2003). The farmers learned local Indonesian languages and culture. The involvement of married couples together was to ensure gender equality and accommodate women of all marital status—married and single.
- b) *Provisioning of agricultural production inputs and equipment.* During 1987-2001, farmers in 23 countries were provided with production inputs such as seeds, pesticides, fertilizers, farm tools, irrigation pumps, and in a few cases tractor, motorcycles and bicycles. In addition, fishermen were provided with motor engines, fishing nets and lines, hooks, swivels, safety jackets, raincoats, or ice chests. In some cases, post-harvest, and other relevant equipment and inputs, including threshers, mills, equipment for processing fruit and vegetables, and training assistance in operating and managing these equipment, and some hand tractors. Beneficiaries were usually members of producer associations, cooperatives and fishermen associations. Special interests of women were ensured by not only providing equipment and training on agricultural production but also equipment for processing fruits and vegetables.
- c) *Establishment of Rural Training Centers.* Based on the assessment of the



- d) apprenticeship programme in 1996, it was decided to train African farmers in their countries to save costs. Two rural Agricultural Training Centers were established as a more cost-effective knowledge transfer between Indonesian and African farmers.

The first, was the Jenoi Agricultural Rural Farmers Training Center (ARFTC) located in Jenoi village, Gambia; The second was the Mkindo Farmers Agricultural Training Center (FARTC) in Morogoro, Tanzania.

Box 1. Agricultural Training Centers for Promoting Indonesia-Africa Farmer-to-Farmer SSC and Gender Equity in Gambia and Tanzania

ARFTC, Jenoi Gambia: A total of 540 farmers, of which 85% were women, have been trained in ARFTC, showing evident of special attention to ensure more women beneficiaries. Additional 56 farmers from other countries in West Africa were trained, half of them being women. Each Gambian trainee farmer was required to return back to their villages and train at least one group of 25 other farmers, which has led to 13,500 farmers trained under the IFF in ARFTC. These farmer trainers and their trainees have formed farmer's association known as Gambia YAMPI Farmer's Association. According to the evaluation report by Shallon et al (2003), the this women-led YAMPI Farmer's Association has become a national force with a growing membership of over 50,000 producers, and most of them are women. Women find it easier to participate because the IFF and FFS provided the necessary flexibilities for most activities.

FARTC, Mkindo, Morogoro, Tanzania: A total of 200 farmers and 30 extension were initially trained at the FARTC. FARTC started to conduct training using FFS approach from 2000. By 2010, a total of 1946 people, involving 874 farmers and 701 village extension workers have been trained in rice technology at Mkindo FARTC. According to Dinur et al (2013), the FFS approach introduced to Tanzania by FARTC has become one of the most important extension tools in the country. The farmers and extensionists from Indonesia were well chosen to cater for the needs of both gender.

- e) *Deployment of agricultural experts to African countries.* In order to ensure adequate backstopping of the training centers and the training programs Indonesian agricultural experts and technicians were deployed to Gambia and Tanzania during 1995 to 2003. Five teams of 2-3 experts were dispatched to Gambia and while six teams were dispatched to Tanzania spending 3-8 months in both countries. Five teams of Indonesian experts of three persons were also dispatched to nine African countries during 1993-1997.

In both Tanzania and Gambia, the Indonesia-Africa SSC was well integrated with the FAO's Special Programme on Food Security (SPFS), as an example of FFS is synergised with the Indonesia-Africa SSC, and they have support at the highest levels from the government. The assessment of this IFF program carried out by FAO in 2003 concluded that the program was productive. The training centers serves as a place where farmers met and exchange ideas for improving their agricultural enterprise. The achievements of the FAO facilitated SSC through the IFF include: 1) rice yield in Mkindo increased from 3 to 6 tons per ha; 2) Food production increased from 300 tons to 9, 000 tons per year; 3) the use of agrochemicals (pesticides/herbicides) for rice production reduced; 4) reduced dependence on extension officers as farmers capacity to train farmers have increased; and 5) women were provided with improved access to agricultural inputs and training. It has also led to very positive perception of Indonesia by African farmers, and has created opportunities for mutual SSC trade.

One of the conditions set by KTNA for funding was focus on women. According to the evaluation report by Shallon et al (2003), indicated several benefits to women. For instance, 300 women vegetable growers were supported through IFF in Guinea, and post harvest processing equipment to women farmers in Madagascar and Sierra Leone. In Sierra Leone Cassava cuttings were provided to 8,000 women farmers, and the project helped save time for women with mechanical cassava graters (2 days work in one hour).

Impact of Farmer Field Schools and South-South Cooperation on gender equity

Women contribute substantially to agricultural production and play a vital role in ensuring family nutrition. Yet, access to land, finance and technology

continues to be a major challenge for women farmers. FFS provides access to skills, guidance and support to both men and women farmers in their experimental and decision-making process, which leads to them eventually implementing new approaches for agriculture production. Wider developmental benefits have also been reported in terms of poverty reduction, collective action and gender impact (Van den Berg and Jiggins, 2007).

One of the key recommendations by the State of Food and Agriculture 2011 (FAO, 2011) for closing the gender gap in agriculture is the scaling up of the FFS. A meta-analysis indicated that at least 10 million farmers in 90 countries have attended FFS, and 55% of projects targeted women farmers (Waddington et al, 2014). Compared to the male-dominated participation in projects globally (30% women), it is evident that gender equity in FFS projects was more successful in Africa, with 54% women participation. For instance, an impact assessment study, Davis et al (2010) showed that females comprised up to 50% of FFS membership in East Africa. In a study undertaken by IFPRI to evaluate an FFS project funded by IFAD and implemented by FAO and governments of Kenya, Tanzania, and Uganda between 1999 and 2008, females farmers made up 50% of FFS membership, and FFSs were shown to be especially beneficial to women, people with low literacy levels, and farmers with medium-size land holdings (Davies et al, 2010). Female-headed households were found to have benefited more than male-headed households in Uganda (IFPRI), indicating that FFS programs offers opportunity to provide agricultural extension services to women.

Over the years FFS approach has been adopted and adapted to several gender tools which aims at securing food security and increasing agriculture productivity. FAO is currently implementing a gender programme in Niger known as the Community Listeners Club (Dimitra, 2014). The system involves young women and men who meet regularly in village, thereby enabling the "voiceless" to make themselves heard, especially women and youth. This has strengthened their leadership and self-confidence. Through collaboration between Dimitra programme and IPPM West Africa the Listeners Club has been successfully launched through an SSC between Senegal and Mauritania. Through Dimitra, the new established FFS group in these two countries were able to mainstream gender-sensitive participatory principles (Dimitra, 2014).

Based on several reports it is evident that in many cases women have been directly targeted in FFS projects and initiatives, or at least provided with equal opportunity to participate in agricultural development initiatives. Although it has been argued that women should not be targeted in isolation of men, and that real change in gender dynamics can only be realized when both men and women embrace change together. FFS provide opportunities gender equity, enabling both women and men to equally participate in development (Deborah 2013). Women participation in FFS has helped modify the narrow interpretation of roles traditionally assigned to women. Gender equity in FFS has presented greater opportunities for women to make informed decisions and to access technical resources and new farming skills, which translates into increase in crop production and income.

Conclusions

The linking of FFS approach and south-south knowledge sharing and exchange creates a opportunity for accelerating agricultural impact and achieving gender equity. SSC can play a catalytic role to promote FFS and consequently contribute to women empowerment in agriculture development and sustainable production. FAO has played a major role in facilitating both FFS and SSC exchanges, and helping governments and grassroots actors to leverage both local and southern capacities to empower family farmers, especially women. Women participation in FFS is particularly higher in Africa than the rest of the world. The Indonesian Farmer's Fund (IFF) facilitated by FAO has shown to be one of the most successful models of farmer-to-farmer grassroots SSC taking advantage of the FFS approach, both of which had their roots in Indonesia. The FFS approach promotes learning, research skills and provided grassroots empowerment for development, and can thus be used to target women farmers and female-headed households while still reaching men.

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Articles

Health risks associated with peri-urban vegetable production by women smallholder farmers in West Africa

Anthony Youdeowei¹

Summary

Successful peri-urban vegetable production by women smallholder farmers in West Africa has resulted in considerable empowerment of women especially in countries like Nigeria, Cote d'Ivoire, Ghana, The Gambia, Benin and Sierra Leone, where women vegetable farmers have organized themselves into well managed Women's Farmers Associations. Despite these apparent benefits, peri-urban vegetable farming practices by women farmers is associated with major hazards and health risks. Wastewater outflows from bathrooms, kitchens, toilets and street runoff is often the only water available as the reliable supply of water allowing farmers to undertake multiple cropping throughout the year. Wastewater is heavily polluted, contaminated and contains many pathogenic organisms which often seriously affect the health of the farmers, the traders who handle produce, as well as consumers, from these peri-urban production systems. These women farmers are therefore constantly at risk of infection through the use of wastewater for farming. Similarly men peri-urban farmers are also exposed to similar hazards and health risks.

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Addressing this critical problem should involve providing women farmers information and practical management skills, through training and capacity development, about the health risks associated with the use of wastewater for irrigating crops in their farms. Women farmers should be trained on how contamination occurs in wastewater and in harvested vegetables as well as the human health risks associated with the use of untreated wastewater to irrigate crops, especially vegetables. Strengthening knowledge and skills in health risk reduction measures and facilitating achievement of the desired attitudinal changes in peri-urban vegetable farmers on the use of wastewater are essential for healthy vegetable production, marketing and consumption.

Introduction

In West Africa many women are known to engage in peri-urban vegetable production targeted at urban families as a means of generating income and to achieve sustainable livelihoods and poverty reduction. Successful peri-urban vegetable production and the production of other food crops has resulted in considerable empowerment of women, especially in countries like Nigeria, Cote d'Ivoire, Ghana, the Gambia, Benin and Sierra Leone, where women vegetable farmers have organized themselves into well managed Women's Farmers Associations. Despite these apparent benefits, peri-urban vegetable farming practices by women farmers is associated with major hazards and health risks. This paper attempts to highlight some of the health risks to which smallholder women vegetable farmers, in particular in West Africa are exposed in peri-urban agricultural production. The information reported here was obtained through an FAO initiative on assessing the use of wastewater for peri-urban vegetable production in West Africa. It must be stressed that men also produce vegetables under similar environmental conditions and they are equally exposed to similar health risks

Production Patterns

Typically, women cultivate a variety of popular vegetables including, cabbages, lettuce, amaranths, peppers, aubergine, okro, cucumber, ginger and spring onions in temporary small farm holdings. These vegetables can be quickly sold in urban areas or in small street shops. Small plots are often found around homes, and especially around uncompleted buildings or on vacant land that is yet to be developed into housing projects. Because these plots are

temporary, without any form of permanent ownership, the women farmers frequently relocate from one site to another as new vacant land becomes available. In effect, these women operate as itinerant farmers.

In most of these peri-urban farming locations, however, there is an acute shortage of clean water for the farmers. Consequently, farmers commonly use wastewater to irrigate the vegetables they produce. The primary source of wastewater is outflows from bathrooms, kitchens, toilets and street runoff. Wastewater is often the only water available, and farmers have no choice but to use such water. Wastewater is a reliable supply of water and it allows farmers to undertake multiple cropping throughout the year.

Health Risks associated with vegetable production

Regrettably wastewater, used by itinerant women farmers, is frequently heavily polluted, contaminated by various substances such as solid domestic wastes, heavy metals and pesticides residues.

It often contains many pathogenic organisms which may seriously affect the health of the farmers, the traders who handle as well as the people who consume the vegetables. For example, recent work by FAO in Accra, Ghana shows that wastewater used by itinerant women farmers contains a wide variety of organisms and materials including:

- Pathogens such as bacteria, viruses, protozoans and parasitic worms.
- Organic particles such as faeces, hairs, food, paper fibers, plant materials
- Inorganic particles such as salts, heavy metals, sand, grit, metal particles, ceramics.
- Animals such as insects, arthropods and small fish.
- Pesticide residues from runoff after pesticide application.

These components of wastewater, especially pathogens, heavy metals, salts and pesticides are harmful to humans and the environment as presented in Table 1, which shows the main health risks identified when vegetables are irrigated with wastewater.



Table 1. Main human health risks from wastewater irrigation

Type of Risk	Health Risk	Who is at Risk	How
Occupational risks (contact)	<ul style="list-style-type: none"> • Mostly parasitic worms such as <i>Ascaris</i> and hookworm infections • Diarrhoeal diseases especially in children • Skin infections - itching and blisters on hands and feet • Nail problems such as koilonychias (spoon-formed nails) 	<ul style="list-style-type: none"> • Farmers/ field workers 	<ul style="list-style-type: none"> • Direct contact with irrigation water and contaminated soil
		<ul style="list-style-type: none"> • Children playing on the farm 	<ul style="list-style-type: none"> • Direct contact with irrigation water and contaminated soil
		<ul style="list-style-type: none"> • Market women 	<ul style="list-style-type: none"> • Exposure to contaminated soil while harvesting • Washing of vegetables using wastewater
Consumption-related risks	<ul style="list-style-type: none"> • Mainly bacterial and viral infections such as cholera, typhoid, <i>Escherichia coli</i>, Hepatitis A, viral enteritis, which mainly cause Diarrhoeas • Parasitic worms such as <i>Ascaris</i> • <i>Poisoning from the chemical pollutants and metals in the waste water</i> • <i>Poisoning from pesticides residues</i> 	<ul style="list-style-type: none"> • Vegetable consumers 	<ul style="list-style-type: none"> • Eating of contaminated vegetables, especially those eaten raw
		<ul style="list-style-type: none"> • Children playing on the farm 	<ul style="list-style-type: none"> • Licking soil, putting soil or solid items in the mouth

Source: FAO 2012 *On-farm practices for the safe use of wastewater in urban and peri-urban horticulture*
A training handbook for farmer field schools



Addressing the challenge and way forward

Although the use of wastewater for vegetable production poses considerable hazards and health risks to peri-urban vegetable producers, consumers of produce from peri-urban farms are also exposed to similar health risks from residues of the poisonous substances. However, the enormous positive benefits derived from peri-urban food production justify expansion and strengthening of peri-urban vegetable production especially amongst women smallholder producers. Through strengthening and expansion of peri-urban vegetable and food production programs, women smallholder peri-urban producers will have the opportunity to earn higher incomes, achieve greater empowerment and acquire the capacity to train other farmers on safe vegetable production.

It is therefore, very important for peri-urban vegetable farmers to be informed and to know about the health risks associated with the use of wastewater for irrigating crops. Women farmers should be trained on how contamination occurs from irrigation water and in harvested vegetables as well as on the human health risks associated with the use of untreated wastewater to irrigate crops, especially vegetables which may be eaten raw or after limited cooking.

Strengthening knowledge and skills in health risk reduction measures and facilitating achievement of the desired attitudinal changes in vegetable farmers on the use of wastewater are essential for healthy vegetable production, marketing and consumption. Through effective training, farmers will obtain the necessary information, knowledge and skills on the best methods to choose from, and on how to use wastewater to produce vegetables with minimum contamination, thereby minimizing associated health risks both for those who handle and those who consume the vegetables produced.

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Women and agricultural land tenure policies and practices: Examples from Eastern Africa

Sebastian Grey¹, Edward Kilawe² and Eugene Rurangwa³

Summary

Throughout Africa and much of the developing world, agricultural production and the sustainable management of land resources is primarily the responsibility of women and children, and women are responsible for between 60-80% of the food production in developing countries. In the eight Eastern African countries supported by the FAO Sub-regional Office for Eastern Africa (Burundi, Djibouti, Ethiopia, Kenya, Rwanda, Somalia, South Sudan and Uganda), approximately 49% of those economically involved in agriculture either full time or as a main household livelihood are women. In these countries, land is one of the most important household assets, particularly for those households that depend primarily on agriculture for their livelihoods. Secure access to and ownership of land for both men and women is thus important for agriculture and contributes to food security, poverty reduction and environmental sustainability as well as gender equity and women's economic empowerment. In fact gender equality is one of the ten core principles of the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (FAO, 2012). Despite this, gender disparities in land ownership are

common, with women often having less access to and ownership of land, water and other natural resources necessary for food production and sustaining of livelihoods. This paper presents key considerations, examples and recommendations for the integration of gender equity in agricultural land tenure policies and practices in Eastern Africa. The paper does not intend to answer all questions regarding integrating gender considerations in agricultural land tenure policies but rather intends to provide some examples and serve as a basis for discussion on how to further integrate gender considerations in agricultural land tenure policies and practices in Eastern Africa.

Why focus on women in agricultural land tenure policies?

Throughout Africa and much of the developing world, agricultural production and the sustainable management of land resources is primarily the responsibility of women and children (AUC-ECA-AfDB, 2010a). Women are responsible for approximately 43% of the agricultural labour force in developing countries (FAO, 2011), and in the eight Eastern African countries supported by the FAO Sub-regional Office for Eastern Africa (Burundi, Djibouti, Ethiopia, Kenya, Rwanda, Somalia, South Sudan and Uganda), approximately 49% of those involved in agriculture, either full time or as a main household livelihood are women (FAOSTAT⁴). In these countries, land is one of the most important household assets, particularly for those households that depend primarily on agriculture for their livelihoods. Secure access to and ownership of land for both men and women is thus important for agriculture and contributes to food security, poverty reduction and environmental sustainability as well as gender equity and women's economic empowerment. In fact gender equality is one of the ten core principles of the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (FAO, 2012). Despite this, gender disparities in land access and ownership are common (FAO, 2010), with women often having less access and ownership of land, water and other natural resources necessary for food production and sustaining of livelihoods. In Ethiopia, for example, approximately 19% of agricultural land holdings in 2011 were headed by women while that figure stood at 16% in Uganda (Gender and Land Rights Database⁵).

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⁴ Accessed 01 December 2014

⁵ Accessed 29 January 2014

Overall, women are less likely to own land; they are less likely to have access to rented land, and the land they do have access to is often of poorer quality and in smaller plot (FAO, 2011). In Eastern Africa, these problems are compounded by internal displacement of people due to civil wars and natural disasters; lack of formal land registration systems; and lack of knowledge on land rights, among others. Countries in Eastern Africa are also at different levels of land policy development and implementation with Uganda for example in the process of finalising national land policy frameworks while Rwanda has had a land policy framework in place for a number of years. Other countries are still in the planning phase. These differences however, present an opportunity for countries in the region to learn from one another particularly in the area of mainstreaming gender equity in national land policy development and implementation. This paper highlights some considerations, and provides examples and recommendations for integrating gender equity in agricultural land policy development and implementation in Eastern Africa. The paper does not intend to answer all questions regarding integrating gender considerations in agricultural land tenure policies but rather intends to provide some examples and serve as a basis for discussion on how to further integrate gender considerations in agricultural land tenure policies and practices in Eastern Africa.

Inclusiveness and participation in land tenure policy processes

Women's participation in the development and implementation of agricultural land tenure policies is crucial to ensure that policies reflect the needs and present-day constraints of women and guarantee fair access to agricultural land by them. However, women are often not fully included in participation in policy development and the processes of land tenure governance, and have limited opportunities to influence decisions regarding land (FAO, 2013). To address this some countries have used different strategies to ensure that the needs of women are heard and incorporated into the development and implementation of agricultural land tenure policies. In Rwanda, for example, the Constitution requires at least 30% involvement of women in decision making bodies, including those pertaining to land rights and tenure such as such as titling and registration agencies, as well as village councils, and adjudication and dispute resolution committees. In Ethiopia, land administration committees (LACs) who are the main actors in data collection for the registration and

issuance of land registration certificates at Kebele level¹, require the inclusion of at least one woman. However, a study found that in practice only 20% of LACs included female members (Deininger et al., 2007). In another example, civil society organisations such as the Uganda and Rwanda Land Alliances, have been involved in land tenure policy development and have advocated for the land rights of women, pastoralists, the landless, and other marginalized people. In Kenya, widows support groups such as Widow Support Network of Kenya have been actively involved in advocating for women's rights including those related to land (Tripp, 2004). In some countries women-only consultations have been conducted at different stages of the land policy development process as well as having consultations conducted in rural communities where women are most affected by prevailing land policies. Such initiatives have helped ensure women's participation at all levels of the policy development and implementation process.

Reconciling statutory and customary laws

Approximately 75% of the land in Africa is governed by customary land tenure systems, and that figure can be as high as 90% for example in Uganda (Sage, 2005). Even within one country, different ethnic groups may at times have different customary laws governing land. In South Sudan for example, there are over 60 different ethnic groups each with their own customary land laws. Customary land inheritance is often patrilineal and in some cases women cannot own land under customary law. In other cases, again, it is statutory laws that are biased against women, particularly in terms of not recognizing the rights of women in customary or polygamous marriages; yet inheritance and marriage are still the most common ways in which women acquire or lose access to and ownership of land (FAO, 2010). To counter policies which disadvantage women, some countries have sought to reconcile statutory and customary laws. Kenya's National Land Policy of 2013 supports the registration of land rights under customary tenure, but contains a number of important reform proposals intended to improve and safeguard the rights of women with regards inheritance of land under customary law including sanctioning women to own and inherit land, to participate in family and community decisions regarding land and to exercise joint control of family resources. In Uganda, the national Constitution and the Land Act of 1998 make recognition of customary land tenure except where

¹ The lowest level of local government.

enforcement of customary land law will result in negative consequences for any women and children involved (WRI, 2011). Positive discrimination in favour of women is emphasised in both documents which have instruments that declare illegal, all customary laws and practices that discriminate against women (AUC-ECA-AfDB, 2010b). In terms of marriage, the Kenyan Matrimonial Property Act makes provisions for the division of property among wives in a polygamous marriage thus recognising customary marriage. The Land Registration Act of 2012 also enforces joint title between a spouse (or spouses) as well as safeguarding the rights of a spouse who is not officially registered on the title (National Council for Law Reporting, 2012). It is important that statutory and customary land, inheritance and marriage laws are aligned with one another and do not limit the land rights of women.

Awareness raising on land tenure policy and land rights

A study on the impact of land reform in Uganda showed that women have limited knowledge of their property rights (Foundation for Human Rights, 2011). They do not know when their rights to land have been violated; and when they feel that their rights have been violated, they do not know how to seek restitution or, at times, are not dealt with fairly in customary courts.

In Ethiopia, despite awareness raising efforts on the land registration process in the Oromia and Southern Nations, Nationalities and Peoples' regions it was found that on average women's knowledge of the land registration process were still lower than that of their male counterparts (Holden and Tefera, 2008). One of the suggested causes of the disparity was that information about the certification process was not equitably disseminated among men and women (Deininget et al. 2007).

In Kenya, the Land Registration Act of 2012 endorses joint titling of land to protect matrimonial property. Awareness efforts on this and other laws related to women's property rights which targeted tribal elders,

especially helped widows to gain control over their family land.

In Burundi, "legal clinics" have been established at provincial level to support women in land rights awareness. At the same time the Burundian Ministry of National Solidarity, Human Rights and Gender has set up numerous family development committees (CDF's) in decentralised rural locations across the country, charged with supporting gender equality in all matters including land (Jonckheere et al., 2013).

Linking land and natural resources

Changes in land ownership dynamics will have differential gender effects, with women more likely to be affected directly by loss of firewood and water among other natural resources found on land (Behrman et al., 2011). Supporting women to secure their land rights thus also implies guaranteeing their rights to natural resources such as water, forests and pastures of which management is required to make the land productive or to support household livelihoods.

One area of concern is in Large Scale Land Based Investments (LSLBI) where the implications of land deals for availability of water, both within and outside the project area, also need to be carefully considered (Behrman et al., 2011). For example, commercializing agricultural land (through lease and/or conversion from production of food to cash crops) upstream of a river may have a negative impact on access to water for small holder farmers (and particularly women) downstream.

Thus in Kenya, The National Water Act of 2002 makes provision for downstream water users by requiring public consultations for large scale use of water for irrigation. This helps protect smallholder water users downstream, particularly women who would be the hardest hit should water shortages occur. Policy measures to prevent such situations and help enable women's access not just to land but also to natural resources such as water, pasture and forests must be considered.

Table 1: Selected land and gender related statistics and information for eight Eastern African countries

	Rural population (*1000).	Number of people economically involved in agriculture (*1000).	% of economically active people involved in agriculture who are women.	% of land holdings headed by women.	Land policy development and implementation stage.	Some gender considerations of the land policy, land law and/or land administration systems.
Burundi	8499	4230	55.70%		There is a Land Code passed in 1986. A National Commission for Land and Property was set up in 2006. A 2009 "Land Policy Letter" also exists.	The 2005 Constitution and the Land Code enshrine the principles of gender equality and non-discrimination on the grounds of sex in all matters including land ownership. The Family Code amended in 1993, provides for joint management of family property including land.
Djibouti	194	272	46.30%		There is no National Land Policy at present.	
Ethiopia	74199	34201	45.20%	19.00%	There is no National Land Policy at present. However, various federal and regional land administration and land use proclamations exist.	Land Administration Committees are required to have at least one female representative. Joint certificates of agricultural holdings between husband and wife are mandated. The Constitution affords equal rights to men and women to own land and prohibits laws and Customary practices that discriminate against women.
Kenya	31955	13622	48.70%		A National Land Policy was adopted in 2009.	Joint title between a spouse (or spouses) is supported by the Land Registration Act of 2012. The act also safeguards the rights of a spouse who is not officially registered on the title. The Matrimonial Property Act makes provisions for the division of property among wives in a polygamous marriage.
Rwanda	9016	4574	56.70%		National Land Policy adopted in 2004.	The 2003 Constitution requires at least 30% involvement of women in decision making bodies. The Inheritance and Succession Law of 1999 gives equal rights to male and female children to inherit land as well as for widows to inherit a deceased husbands land. The Family Code protects women whose marriages are registered.
Somalia	6168	2582	45.80%		There is no National Land Policy at present. There is a Land Law passed in 1975 focusing on agricultural land.	
South Sudan	72990	1679	40.10%		There is a draft Land Policy adopted in 2013 and a Land Act of 2009 (as Southern Sudan).	The Land Act of 2009 states that all citizens have the right to own land including women. County Land Authorities require at least one woman representative. The Transitional Constitution requires that 25% of positions in government bodies be filled by women.
Uganda	29678	11526	49.40%	16.00%	The National Land Policy was adopted in 2013.	The Land Act has a spousal consent clause in matters related to land sale or lease. Positive discrimination for women is enshrined in the Constitution of 1995. The Constitution and Land Act have recognition of customary inheritance law except where it negatively affects women and children.

(Sources: AUC-ECA-AfDB, 2010; FAOSTAT; Gender and Land Rights Database; ILC, 2014; National Council for Law Reporting, 2012)

Linking land and natural resources

Changes in land ownership dynamics will have differential gender effects, with women more likely to be affected directly by loss of firewood and water among other natural resources found on land (Behrman et al., 2011). Supporting women to secure their land rights thus also implies guaranteeing their rights to natural resources such as water, forests and pastures of which management is required to make the land productive or to support household livelihoods. One area of concern is in Large Scale Land Based Investments (LSLBI) where the implications of land deals for availability of water, both within and outside the project area, also need to be carefully considered (Behrman et al., 2011). For example, commercializing agricultural land (through lease and/or conversion from production of food to cash crops) upstream of a river may have a negative impact on access to water for small holder farmers (and particularly women) downstream. Thus in Kenya, The National Water Act of 2002 makes provision for downstream water users by requiring public consultations for large scale use of water for irrigation. This helps protect smallholder water users downstream, particularly women who would be the hardest hit should water shortages occur. Policy measures to prevent such situations and help enable women's access not just to land but also to natural resources such as water, pasture and forests must be considered.

Conclusion and Recommendations

Insecure land ownership and access is one of the most serious obstacles to increasing the agricultural productivity and incomes of rural women (AUC-ECA-AfDB, 2010b). Yet, women face serious gender gaps in access to productive resources such as land in most developing countries (FAO, 2011) and these gaps are unlikely to disappear within the existing legal, institutional, social and cultural framework of many Eastern African countries. Action to adjust land tenure policies and to implement revised policies is still needed in many countries in Eastern Africa, the focus of this paper, particularly with regards to gender equity. This action must strive to ensure that women can own, register, use, sell and lease land under the same conditions as men, regardless of marital status, age or any other gender discriminatory reason. Policy makers must make concerted efforts to ensure that women benefit from land tenure policies and laws by making specific mention of the land tenure rights of women in agricultural and other land tenure policies. Due to the major role that women play in land

management, agricultural land tenure policies cannot be "gender neutral", but must explicitly consider the particular needs and present constraints faced by women. Increasing women's representation within land administration institutions, such as titling and registration agencies, as well as village councils, and in adjudication and dispute resolution committees, can also make a big difference in the way women's land rights are developed, interpreted and enforced. Land reform and land commercialisation must also be carefully planned so that it does not have a negative effect on women in terms of access to and ownership of land as well as in terms of access to natural resources such as water, forests and grazing land. Awareness raising, education campaigns and legal support for women are also essential components of agricultural land tenure policy implementation and must be considered at all steps of land policy development and implementation.

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Examining culture and gender equality in forest management: The case of Nyimba, Eastern Zambia¹

Roselyne M. Mwila²

Summary

Humanity has depended on forests for wood, energy, food, medicines and income since time immemorial. Poor households and women depend more on forest products for their basic survival needs than men. Access to forest products and resources in most cultures in developing countries is differentiated on gender lines and forest products that women harvest are often those perceived to be of low monetary value. Cultural barriers such as polygamy, early marriages and unequal inheritance rights increase women's subordination and inequality in the management, access and control of forest products and resources. There is therefore need to promote gender equality and full participation of women in all aspects of forest management and address the culture-national policy interface through gender sensitive regulations and policies.

Introduction

Humanity has depended on forests as a source of wood, energy, food, medicines and income (both directly, and through non-farm employment) since time immemorial. The level of dependence on forests is high among the poor and literature shows that women in developing countries depend on forest products for their

livelihood more than men (CIFOR, 2013, CPF Online, 2012 and WWF Online, 2012). In most cultures in these countries the use and access rights to renewable natural resources are differentiated along gender lines and thus define what activities and roles women and men engage in, respectively. This differentiation has been attributed to the physical demands of many tasks, historical use patterns, cultural practices that limit women's resource ownership, long distances to forests to collect preferred species for food, fuel, wood for poles, household assets, canoes as well as farming tools and difficulties in accessing markets (Sunderland *et al*, 2014).

In Zambia, just like most parts of the developing world, rural women harvest forest products that are considered to be of low monetary value such as firewood, forest medicines, fiber, fruits and vegetables for subsistence, while men are more engaged in the exploitation of economically valuable forest products, such as timber marketed for commercial purposes (Wan *et al*, 2011). But over time, women's involvement in the utilization of forest products has gone beyond their 'expected' activities, and women are increasingly venturing into activities traditionally associated with men such as charcoal production and trading in wood and timber (Gumbo *et al*, 2013).



¹ The research was carried out during the implementation of the Nyimba Forest Project that runs from August 2012 to December 2014. The author acknowledges the assistance of Tiza I. Mfuni, GIS/RS Research Officer for the provision of the two maps used and of Davison Gumbo, Regional Scientist for his insightful comments on the first draft of the paper.

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Photo1. Women charcoal traders in Zuwalinyenga village, Nyimba, Zambia
Photo courtesy of by Olivier Girard/CIFOR

This is a further burden on women, who also have to deal with labour-intensive and time-consuming family-related and childcare responsibilities such as taking care of the household, bearing and caring for children, preparing food, and collecting water and fuel (March *et al*, 1999). Besides, women have to find time for community and social events such as traditional ceremonies and celebrations, and participate in local groups, politics and decision making (Mwangi *et al*, 2011 and March *et al*, 1999). Zambia has ratified and acceded to a number of international human rights instruments that have been applied at the national level through Acts of Parliament in an attempt to promote gender equality. Gender equality determines gender roles and responsibilities, access to and control over resources, and decision-making potentials (UN Women Online 2014). Some of the regulatory frameworks that facilitate gender equality

include: National Gender policy, Draft National Forestry Policy, Education Policy, Interstate Succession Act, National Cultural Policy, Lands Act, and Citizens Economic and Empowerment Act (ZGF, 2010). However, cultural practices such as polygamy, unequal inheritance rights, and early marriages for girls are still a source of gender discrimination.

This paper is based on a project in Eastern Zambia, precisely in Nyimba district located 340 km East of Lusaka, Zambia's capital city as shown in Figure 1 below. The district has an approximate area of 10,509 km² and the 2010 census estimated the total population at 85, 025 people making it one of the least populated districts in Eastern province with a population density of 8.1 persons per square kilometre.



Figure1. Map of Zambia showing the location of Nyimba

The economy of the district is largely rural agriculture with 90% of households participating in crop and livestock agricultural activities (CSO, 2012). Other income sources include charcoal production, local beer brewing, burning bricks, carpentry, selling thatch grass, reeds products, wild vegetables and fruits and remittances from family members. Eastern province has high rates of illiteracy and the lowest gross attendance rates for both primary and secondary schools in Zambia. The attendance rates for girls is lowest for secondary school grades as most girls are married off at a very young age (CSO, 2011). The *Nsengas* are the dominant ethnic group in the district.

Using the Longwe Framework (March et al, 1999), this paper assesses gender aspects related to equality in the management, access and control of forest resources in Nyimba district, Eastern Zambia. It is aimed at showing how cultural and traditional practices trap women in situations that make it difficult to be emancipated from subordination and prevent the achievement of equality.

Method

The data utilized in the paper was obtained through literature searches and activities carried out as part of the implementation of the Nyimba Forest Project (NFP). The NFP is USAID funded project which prioritizes gender issues in the design and implementation (CIFOR, 2012). The project was implemented in eight "focal villages" in Nyimba, shown on Figure 2 below, where data including gender issues from meetings and project activities has been systematically gathered.

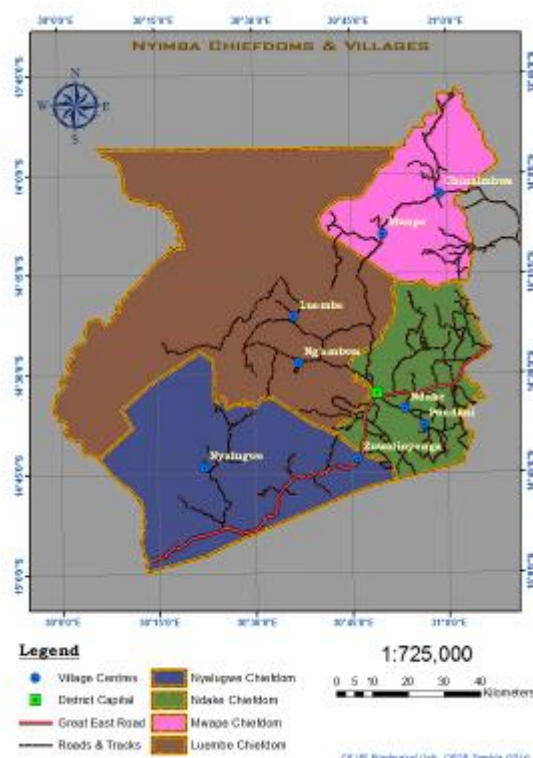


Fig.2. Map showing the eight focal villages in Nyimba

Results and Discussion

The findings of the project show that women's engagement in forest management activities was limited. Women's participation in project activities averaged 39.7%, as shown on Figure 3 below, with community meetings and focus group discussions having the highest representation of women. Decision making activities such as village forest action plan, chiefs' and district meetings had low participation of women. One out of the four chiefs participating in the project in Nyimba is a woman. Chieftainess Mwape, has been instrumental in including the women's voice in the environment sector in the areas concerned. During the implementation of the project activities, the contribution of women to deliberations was low, but women were able to express themselves freely in face to face "informal" conversations. The main reason was that women needed to get approval from their husbands for them to advance their opinion in public to avoid saying something that might embarrass their husbands. This not only robbed the opportunity for women to be heard in public but also led to missing the chance to include women's voice in formal reports and decisions and provided an opportunity for men to prioritize male dominated activities

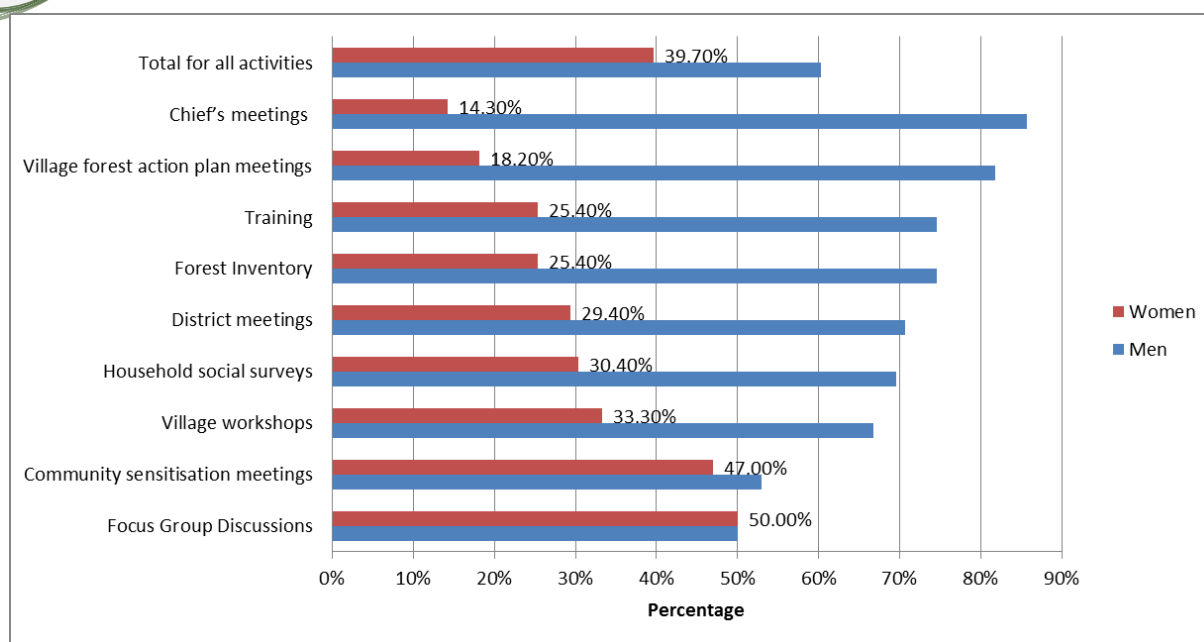


Figure3. Gender representation in Nyimba Forest Project activities

The low participation of women can be attributed to fewer women working for institutions mandated to manage forest resources and high levels of illiteracy among women in communities due to girls dropping out of school to be married. This excluded women from taking part in NFP activities such as forest inventories and household surveys that required participants to have a certain level of intellectual understanding of instructions on how to measure and record information accurately. The results of these activities were crucial in prioritizing what goes in the village forest action plans. Although the project strived to have equal participation in its various activities, local selection of representatives of the villages was culturally determined and these culturally embedded inequalities could not be changed over the 29 month project implementation period.

Culturally, the *Nsengas* are matrilineal, and women can make decisions on certain issues in the village. For example, the *Mbumba* (aunts of the heir to the throne) are the ones in charge of chief successions. They can put someone as a chief or dethrone them if there is just cause to do so. Women can also make decisions in marriage negotiations and in certain cases on resource use. However, access to and control over forest resources still remains in the hands of men. Certain sites and forest species are designated as sacred and can still only be accessed by men. Although some sacred sites such as burial

sites are respected by almost everyone in the villages, the other rules related to sacredness are not followed and men use the cultural excuse to exclude women from accessing resources in areas designated as "sacred".

Interestingly, at household level, women are the owners of all household goods and resources, they are the heads of households and the children are given the mother's *Mwene* (clan family) name. However, access to productive resources such as land is still through a husband, son (if widowed) or through a male relative if single, and decisions on the use of income earned by the household, in most cases, are made by the men. The long term implication is that gender norms and social norms in Nyimba are reinforcing each other, both excluding and marginalizing women.

The project has also found that naturally forming resource user groups at the village level are gender insensitive and do not take into account gender policy provisions. The National Gender Policy (2000) stipulates that 35 % of the members in a group initiative must be women. The user groups were either exclusively men or women differentiated by the type of forest products the groups harvest from the forests.

Involving women in different sustainable forest management activities including decision making as well as securing women's right to forest products and

resources are incentives that will yield better outcomes for communities. Women's management skills make them effective managers of forest landscapes and their responsibility to take care of the family health and needs provides motivation for ensuring sustainable management of forest resources. However, men will have to be sensitized on the benefit this will bring to their communities to avoid conflicts (CPF Online, 2012).

Conclusions

Although equal participation in decisions related to the management of forest resources is crucially important, however having women in attendance in different fora does not necessarily translate into gender equality. Therefore, efforts to foster women's full participation should be embedded in different interventions. The low levels of participation of women obviously entrenches men's domination in decision-making. Explicit guidelines to a 'gendered' allocation of forest products and resources should be introduced to ensure that women do not only have access to but also control over such resources (March *et al*, 1999).

The situation in Nyimba requires the breaking down of the cultural barriers that hinder women from full participation in forest management by engaging men and women equally in sensitization and conscientisation activities in order to address the issues that sustain the discriminatory social and cultural norms in communities. As long as the men do not change their attitudes and behaviors, efforts to ensure equality will not yield results. Increasing involvement of women in forest management can contribute positively to forestry policy making and implementation of programmes, because women are an important reservoir of knowledge on how forests products are harvested, processed and marketed for the benefit of the households and communities (Wan *et al*, 2011). At community and national levels, there is a need to address the culture and national policy interface by promoting the implementation of gender enabling regulations and policies. Overlooking gender issues emanating from culture and traditions in the management and utilisation of forest products and resources can result in incorrect assessments of the effects of new policies on forest dependent communities (Shea *et al*, 2005).

Way forward

There needs to be more extensive research into how the current systems and policies including different

cultural practices may be affecting women's utilization, access and control of forest resources as well as their contribution to the sustainability of these resources. There is the likelihood that these impact sustainable use of renewable natural resources in different ways in different parts of Zambia.

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A decisive impact in natural resource sustainability: Key gender considerations in post-harvest fisheries

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Summary

Most vulnerable users of natural resources –notably female actors- can influence decisions on responsible fishing and post-harvest practice. Several factors within the institutional and socio-economic realities hinder women's contribution to the sustainable resource management. The resignation linked to their poverty level can suppress the ability of female actors to fully take part in the process of decision making on the utilization of resources. The concomitant household and productive (fisheries) responsibilities can have a comparative disadvantage on their performance in the related activities as women's time for participation in decision making processes, in training activities in control and surveillance activities will be limited. The specific needs in post-harvest activities, a domain they are particularly active in can promote or hinder women's role in making post-harvest actors part of a resource management tool. The post harvest activities need to receive more technical and organizational support to enable its actors engaging for a decisive impact in sustaining fisheries and other natural resources. This institutional and organizational support will need agencies involved in fisheries management to use an inclusive approach which should feature gender

inclusive analysis in fishing and downstream activities.

Women can spur another vision on value addition; hence enforcing sustainable resource management. Cases are built on the critical role of institutions and services in assessing post-harvest losses and analysing the benefits from the value chain for gender sensitive innovations in the fisheries operations to bolster sustainability.

INTRODUCTION

New estimates indicate that the African fisheries sector as a whole employs 12.3 million people as full-time fishers or full-time and part-time processors, representing 2.1 percent of Africa's population of between 15 and 64 years old (De Graaf & Garibaldi, 2014). While men are predominantly involved in fishing, women are usually more actively involved in the downstream activities, such as the post-harvest handling, fresh fish mongering, processing, storage, packaging and marketing. These women make up 58% of the actors in the post-harvest activities, a significant representation which mirrors the gendered division of labour described in other parts of the world (Weeratunge & Snyder, 2009). Women are also involved in fishing, predominantly in small-scale fisheries, where their role as boat owners or sponsoring fishing trips in their function as middlemen, with the funding of gears, boat, food for crew members, etc. is well documented. However, very important differences occur between regions: in numbers of actors, (De Graaf and Garibaldi, 2014) and even between fish value chains (Crona et al., 2013).

Hence, as indirect fishers, or mainly as post-harvest operators, women are important users of the fisheries resources, as well as other associated natural resources such as water, wood, land, that form essential part of the production and processing inputs. This pivotal role played as important actors in the value chains as well as the nature of relationships between male and female functions are however seldom recognized in a fisheries sector often perceived as very male-dominated because most fishers – those who go out in boats and fish – are men. Yet addressing this is of critical importance for their participation in the fisheries governance and sustainable management of the natural resources. This paper focuses on post-harvest fisheries activities and raises critical issues for considerations. The role

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of different actors; issues pertaining to women, and most vulnerable users of resources in the fisheries sector (be it men or women) are discussed. It then suggests how to bolster sustainable use of resources through gender inclusive analysis.

How sustainability of natural resources can be undermined if post-harvest female users' role is not valued

Women have established their fishing practices in inland, marine and brackish water bodies and acquired direct access rights to the resource, in parts of the continent. Commonly known but not exclusively in small-scale communities in countries such as Benin, Cameroon, Congo D.R, Senegal, etc. where they are formally reported in fishing crustaceans or collecting shellfish (Westlund et al., 2008) these fishers directly use the fruit from the aquatic environment. As such, the rationale for their inclusion in fisheries governance is obvious and undisputable. Even if they represent a small share of the fishers, barely 3.6 % according to the most recent estimates (Ref. Gertjan & Garibaldi) their rights to have a say in any decision making process regarding resource management should not be overlooked. Depending on the type of value chain and its governance system resource management will be more influenced by women or men and thus should be taken into account.

If there is a domain where women are particularly active and where the status of resource users is not obvious, well elaborated and always acknowledged, it is their owning and/or managing fishing inputs and in the post-harvest handling.

Many so-called “*fish mummies*” in West Africa, for instance, draw their fame and prestige from this participation in the fisheries and beyond and they influence the overall ecosystems but very often not through an institutional management setting. The influence on the fishing practices of the *fish mummies* comes from their direct decisions on investments in boats, motors and nets used.

At the same time, poor women in particular – are not always included in decision-making processes and can have difficulties in making their voices heard especially on issues affecting the sustainability of their operations and their livelihoods. Under the progressive gender awareness at the level of fisheries departments, efforts have been made for greater inclusion in the decision making processes, as

illustrated in key positions on the board of CBFMC (community based fisheries management committees) such as the Beach Management Units (BMUs), the notion originally coming from East African lakes (ex: the Lake Victoria), but now familiar in other geographic locations Béné et al. 2012), other than the usual snapshot of assistant or treasurer/accountant in several institutions. Other good practices have been documented elsewhere in Africa - in the Gambia, Senegal, Mali and Burkina Faso (Angaman et al., 2007), but overall it ought to be admitted that from decades of development assistance these are more of an exception than the rule (Lentisco & Lee, 2013).

In battling with decision makers and planners to objectively substantiate the economic contribution of post-harvest activities of these women, the lack of data (especially sex and age disaggregated data) could undermine the support that would have otherwise galvanized them to address the differential access to resources between men and women. Moreover the lack of disaggregated data makes it difficult to detect socio-cultural impediments and other factors weakening women's position and visibility in fisheries statistics.

This is a negative impact to their ability to fully participate and exercise their rights. Various initiatives and recent development projects and programmes, such as in the Volta Basin (FAO document in publishing phase) or ongoing technical cooperation programmes geared to post-harvest losses reduction have addressed some key dimensions of how gender mainstreaming results in greater impact in sustaining resources and at the same time securing livelihoods.

In these initiatives and project both men and women play a role and the following factors directly impact on the performance management of catches and inputs, hence also on natural resources explain how this is achieved:

The overall poverty status in relationship to resignation of the incumbents

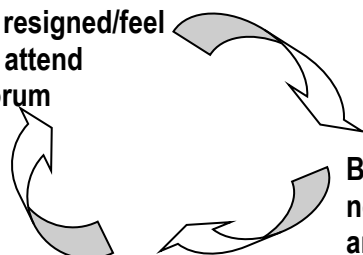
The notion of gender is deep-rooted here as it relates to vulnerable groups of both men and women. However, since in most communities women and youth form the most disadvantaged strata, any reference to gender primarily refers to poor women. Whether their interests are catered for in the post-harvest loss assessment from discussion, formulation to implementation of any intervention in the post-

harvest domain and the value chain upgrading strategy, will determine the attainment or failure of the resource management outcome.

Poverty is one of the dimensions to look out for as it constrains the concerned fish operators' capacity and prevents them from engaging in any forum. Yet vital decisions can be made in a post harvest loss and

resource management forum discussion including on fisheries, land tenure or forestry governance. Cases reported of less exposure to innovations in post-harvest fisheries can be put into the broader perspective of sustainable natural resource management that can be illustrated as follows:

They are poor, hence are resigned/feel embarrassed and do not attend community/discussion forum



Because they do not show up, their voice is not heard/their awareness on management and technology innovation is limited

They are least exposed to training and innovations and are Comparatively less efficient (for instance incur more post-harvest losses) which sustains their poverty status

This cycle is continuous as long as no attention is paid to bringing up the interests of these actors and making deliberate efforts to include them. The lack of attention for an inclusive approach contributes to poverty of potential post-harvest actors. When considering the smoking of fish, which is a predominant processing method in small-scale fisheries, post-harvest practices will translate into loss of fish, but also waste of wood used as fuel (massive use of wood to process few fish of poor quality fish), which is a concern pertaining directly to natural resources. A study from Volta Basin riparian countries reported a fish to fuel wood rate of 2-4 times of the smoking system used by impoverished women compared to the existing improved kilns, such as the popular Chorkor and the recently introduced innovation, the FAO-Thiaroye fish processing technique (FAO, in publishing phase).

Level of gender-sensitivity of support, infrastructure and technology

The different roles played both at household and professional/fisheries levels by women translate into

different time allocation compared to their male peers, which has impact on their preparedness or capacity to effectively manage their operations.

Caring and other reproductive tasks must be combined with the work that women do in the value chain. Furthermore being unable to be present in the market at the right time (due to other roles) negatively influences the quality and quantity of fish or of other services. Some of the losses incurred during processing are due to incomplete or excessive smoking or calcination of the product and waste of fuelwood. Should there be an enabling environment for them to concentrate on the handling and smoking – for instance with a childcare facility or an assistant- this kind of losses would hardly occur. Indeed, having to concurrently manage time between household chores, pre-treatment and processing of fish means that housewives face a situation incommensurate with the one of a male processor, independently of their level of knowledge or control of smoking techniques.

These issues and others are captured in the following diagram entirely drawn from the Volta Basin case study (FAO, in publishing phase).



Women are interested to participate in community platforms where decisions on resources management are discussed but household occupations hinder them as institutions take relatively less into account reproductive occupations when setting the time for meetings.

Timing of landings or opening hours of infrastructure do not always coincide with women's time use and prevents them from being present during the first hours of auction/sale even if they have the relevant financial means to purchase the best quality fish

Managing this disadvantage to reduce the level of losses is therefore a priority in the context of lightening chores and capacity building.

Linkage between social and economic empowerment and curbing of illegal fishing practices

Women in the downstream stages of the fish value chain (fish mongers, processors, traders) are the interface/linkage between the fisherman and the consumer. They are thus impacted by what happens upstream and at market level. As first purchaser of the product from the harvester, women can influence

the behavior of fishermen in terms of fish landed. In the Volta Basin study, it was documented that practices that cause post-harvest losses in terms of quality are directly linked to the small tilapia's size processed. This also has a potentially strong negative impact on the environment and aquatic resources sustainability (depletion of fish stocks and habitat destruction).

Small fish being caught and bought by the women for processing (mostly frying) cannot be properly handled hence deteriorate and spoil easily, which results in high post-harvest losses. This practice affects approximately 73%-80% of the tilapia production in two of the 4 sites studied in Burkina Faso as per the findings of the national post-harvest loss assessment team.

The women still find buyers for the small size processed fish because of the socio-economic context of the target market (purchase power). The poor rural dwellers indeed ask for smaller portion size products that can accommodate various price preferences; something mostly possible with small size fish. Regulations of mesh size and fishing practice prevent capture of this small fish but post-harvest actors buy the small fish as a demand exists in the target market.



*Photos showing the different sizes of Tilapia offered for sale in one of the study sites in Burkina Faso.
Photo courtesy of Y. Ouedraogo*

If sufficiently empowered, female processors can be drivers of another vision on value addition (not quantity but quality), hence enforce the deterrence of illegal fishing. Women's association and group dynamics can be a lobby to turn down the supply of such a fish.

Offering simultaneously support resource management measures such as limiting access to or control of illegal fishing, and institutional support for livelihoods diversification can lead to post-harvest actors to get involved in other alternative income generating activities and also contribute to alleviate this phenomenon of illegal fishing. This is an approach being used in field projects on post-harvest loss reduction.

Conclusions and suggestions on bolstering natural resource sustainability in mainstreaming the gender dimension

From above, it is clear that unless specific rural community resource management and value chain approaches are used, there is a high likelihood of missing out the voice of poor women and youth who represent the silent majority in sustainable natural resource management. It is therefore crucial to engage through participatory planning and actions,

and ensure that vulnerable groups within communities and the value chain are represented and listened to in decision making processes. Putting the needs of the most vulnerable at the centre, and combining the needs for responsible fishing with social and economic development in the value chain is the way to meet the objectives of sustainable natural resources management as well as sustainable and resilient livelihoods.

Gender analysis of resource management, institutions and services in assessing post-harvest losses and analysing the benefits along the value chain are critical for gender sensitive innovation in fisheries operations (Tindall et al, 2008). When looking for ways to solve the issues of lightening women's burden to enable efficient post-harvest operations, it would be appropriate to contemplate social, health and education facilities such as nurseries, kindergartens and schools.

Addressing the burden of reproductive tasks in the context of increasing women's participation in community resource management and increasing professionalism solutions should pay attention to the economics and cost involved. Lessons from the field are that it can have consequences on potential post-harvest benefits, as these represent additional production costs.

When planning the introduction of innovations the focus should be not only on numbers and economic performances at different levels in the chain but as well on the relationships between male and female actors and the impact of gender discrimination in infrastructure and service access. This is all about the value of any assistance aiming to make the most impact.

Data should be generated on the involvement/contribution of women to the sector and ensure that policies, strategies and plans reflect accurate gender disaggregated information.

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Gender at the interface of natural resource management and livestock development

Tacko Ndiaye¹ and Cheikh Ly²

Introduction

Demands for animal protein and natural resources such as land and water are increasing in Africa due to population growth, climate change, urbanization, increasing living standards and food consumption, and the competing demands for such resources have strong gender implications. For instance, the search for optimal energy alternatives such as biofuels can have a detrimental impact on women's access to resources such as land. FAO warns that "As competition for land increases under pressure of climate change and the expansion of biofuel cultivation, women are also disproportionately disadvantaged. In many parts of the world, because of entrenched legal and institutional discrimination, women do not hold formally recognized land rights. They often may face discrimination in customary tenure systems as well... they often have little control over how the land and other natural resources are managed. When populations are forced to resettle to new lands or communally held land is appropriated, it is rare that women's needs and priorities are considered³."

Natural resource management and livestock development are strongly related. Land, water and trees are essential for animal husbandry. In multi-use systems, animal and plant wastes are used to produce manure for mixed cropping systems. Rural women use solid fuels such as wood, dung and crop

waste for cooking. The use of animal waste as fertilizer is widespread in farming systems. FAO research shows that "livestock can improve soil and vegetation cover and plant and animal biodiversity... By removing biomass, which otherwise might provide the fuel for bush fires, by controlling shrub growth and by dispersing seeds through their hoofs and manure, grazing animals can improve plant species composition. In addition, trampling can stimulate grass tillering, improve seed germination and break-up hard soil crusts⁴." However, livestock development can lead to over exploitation of natural resources, both in terms of terrestrial and aquatic ecosystems, leading to land degradation and impacting water availability. FAO notes the detrimental impacts of overgrazing, soil degradation and deforestation on natural resources: "Prolonged heavy grazing undoubtedly contributes to the disappearance of palatable species and the subsequent dominance by other, less palatable, herbaceous plants or bushes. Such loss of plant and, in consequence, animal biodiversity can require a long regenerative cycle (30 years in savannas, 100 years in rainforests). Excessive livestock grazing also causes soil compaction and erosion, decreased soil fertility and water infiltration, and a loss in organic matter content and water storage capacity. On the other hand, total absence of grazing also reduces biodiversity because a thick canopy of shrubs and trees develops which intercepts light and moisture and results in overprotected plant communities which are susceptible to natural disasters⁵." The use of pesticides and herbicides to protect plants and trees can have detrimental impacts on animal health.

A synergetic approach is needed to enhance the positive and mitigate the negative effects of grazing, address natural resource management and livestock development in a mutually reinforcing manner, while dealing with possible vulnerabilities and tensions between the two sectors and ensuring women and men's different roles, constraints and opportunities are appropriately reflected. This paper brings under discussion the gendered interconnections between natural resource management and livestock development and proposes policy and programmatic responses.

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³http://www.landcoalition.org/sites/default/files/publication/786/09_Land-Infosheet-En.pdf

⁴ <http://www.fao.org/docrep/x5303e/x5303e05.htm>

⁵ Idem

Why is it critical to address the gendered links between natural resource management and livestock development?

Natural resource management and livestock development are both instrumental in building women and men's productive assets, ensuring their food and nutrition security and reducing rural poverty. For instance, evidence shows that livestock is an important non-land asset that women can easily acquire, own, control, inherit, transfer and sell. In Africa, goats represent around 30 percent of the ruminant livestock and provide about 17 percent of the continent's meat and 12 percent of the continent's milk. In the Gambia, 52 percent of sheep owners and 67 percent of goat owners are women¹. Livestock production can contribute significantly to diversifying the food base of households, reduce malnutrition and increase revenues of women. Land is the most important productive asset for agriculture and its sub-sectors including livestock, and an important collateral that would allow women and men farmers to access transformative credit from the formal banking system.

Both natural resource management and livestock development have social, economic and environmental implications from a gender perspective. Both sectors should address the gendered entitlement systems, the gendered patterns of production, and gendered division of labour to reduce existing gender disparities and provide equal opportunities to women and men. With regards to gendered entitlement systems, women and men face different opportunities and challenges in accessing and controlling natural resources and in acquiring, managing and maintaining livestock and livestock derived products throughout the value chain. To illustrate, despite women's key roles in managing different forest products, collecting fuel wood and water, preserving soils, breeding livestock and producing fodder, yet important gender disparities still exist in ownership of land and livestock. FAO reports on gender disparities in land holdings in sub-Saharan Africa show that women hold less than 5 percent of land in Mali to over 30 percent in countries such as Botswana, Cape Verde and Malawi². Land tenure

systems in most parts of Africa, tend to be gender biased in disenfranchising women from land-titles and ownership, in particular under the patrilineal system of inheritance, where only male children inherit land.

Concerning the gendered patterns of production, women and men own different livestock types, with women mainly involved in chicken and small ruminants such as goats and sheep, while men own bigger livestock such as cattle, camels and horses which are more prestigious, have higher monetary value, increase mobility and provide animal labor for agricultural production. Female headed households have smaller and fewer livestock holdings than men in all countries for which data are available, and earn less from the livestock they do own: in Ghana and Nigeria, male holdings are more than three times larger than those of female-headed households³. Women and men require livestock and their byproducts for different functions. For example, women specialize in the production of dairy products. Although women play a pivotal role as owners, processors and users of livestock products, they often do not have decision making and economic power within the household and the community. Similar gender specialization also exists in agriculture with the predominance of women in subsistence farming while men tend to predominate in cash crops production.

As regards gendered division of labor, women's multiple tasks related to their reproductive roles of producing, feeding and nurturing the agricultural labor force; and their productive role related to their farming and livestock activities are strongly dependent on natural resource management. To cite an example, the intensity of women's unpaid care work such as fetching water, collecting firewood or cooking meals is related to the proximity of water points or availability of forest products: a study in Malawi found deforestation was forcing elderly women to walk more than 10 km a day to collect fuel wood. Women spend on average 800 hours a year in Zambia and 300 hours a year in Tanzania on the same task⁴. Reducing women's unpaid work burden should be part and parcel of natural resource management and livestock development.

¹http://www.fao.org/ag/AGAInfo/home/en/news_archive/2013_Empower_women_livestock_keepers_key_to_food_security.html

² FAO, 'The State of Food and Agriculture: women and agriculture, closing the gender gap for development', 2010-2011

³ FAO, 'The State of Food and Agriculture: women and agriculture, closing the gender gap for development', 2010-2011

⁴ <http://www.fao.org/gender/gender-home/gender-programme/gender-forests/en/>

A favorable political momentum

There is great political momentum on the need to address gender equality and women's empowerment in all the policies and programmes of the African Union Commission (AUC) and its member States. The recent African Union (AU) Heads of States Summit in Malabo has endorsed the theme of the January 2015 Summit of the African Union as: "2015 Year of Women's Empowerment and Development towards Africa's Agenda 2063"¹. The present political commitments at the highest level should permeate all policy and programming work of the AUC, including in the natural resource management and livestock sectors. FAO notes that, "If women had the same access to productive resources as men, they could increase yields on their farms by 20-30 percent and raise total agricultural outputs by 2.5 to 4% and this could lead to an estimated 100-150 million people out of hunger"², and this is also true for livestock. The Malabo Declaration on "Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods" adopted in June 2014 highlights the role of women as strategic economic agents and called for targeted public support³.

Previously, in January 2009, the Heads of states and governments at the 12th Ordinary Session of the Africa Union Summit held in Addis Ababa declared 2010 – 2020 as the African Women's Decade (AWD), which was formally launched in October 2010 in Nairobi. In February 2009, the AU Gender Policy⁴ was adopted by the Assembly of Heads of State, including policy commitments and an Action Plan. These follow the adoption of the 'Protocol to the African Charter on Human and Peoples Rights on the rights of women in Africa'⁵ adopted in 2003, which is the bill of rights for gender equality and women's empowerment.

¹ Assembly/AU/Dec.539(XXIII), *Decision on the Theme, Date and Venue of the Twenty Fourth Ordinary Session of the Assembly of the African Union*.

http://www.au.int/en/sites/default/files/Assembly%20AU%20Dec%20517%20-%20545%20%28XXIII%29%20_E.pdf

² FAO, 'The State of Food and Agriculture: women and agriculture, closing the gender gap for development', 2010-2011

³ Assembly/AU/Decl.1(XXIII), *Malabo Declaration on "Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods"*

⁴ [wgd.au.int/en/sites/default/files/Gender%20Policy%20-%20English.pdf](http://www.wgd.au.int/en/sites/default/files/Gender%20Policy%20-%20English.pdf)

⁵ <http://www.achpr.org/instruments/women-protocol/>

In the context of the present formulation of a continental livestock development strategy, and regional strategies for natural resource management, it is essential to incorporate the provisions of the AU Protocol on the Rights of Women and the AU gender policy.

Recommendations for actions

Issues prevailing in the interconnections between natural resource management and livestock development can be addressed from a gender perspective. Practical ways of addressing these should include:

- **Analysis of land-use management and livestock development** from a gender perspective, which is key to informing natural resource management and to optimizing land use efficiency. This involves addressing women's land tenure rights, ensuring that they have adequate access to land for grazing and securing their full participation in all consultative mechanisms for development of policies and programmes.
- **Cross sectoral management of natural resource and livestock development** including multi-sectoral gender responsive planning, budgeting and monitoring and evaluation.
- **Multi-use systems in particular**, turning waste and by-products into a resource for other products and services, for example, use of rain water harvesting for animal consumption by women and men pastoralists.
- **Innovation and technology** that support women's roles in natural resource management, and their participation in livestock development and value chains.
- **Gender responsive service delivery in the livestock sector, while addressing natural resource management.** Such services include: extension and veterinary services; prevention and control of priority animal diseases; sanitary standards and regulations; artificial insemination services; capacity building of animal health workers and para-veterinarians, especially for small ruminants; and financial services.

- **Equal participation of women and men in natural resource and livestock governance**, including ensuring women's full participation in all decision making processes on renewable natural resources management and sustainable livestock development such as key policy platforms and multi-stakeholder policy dialogue.
- **Collection, analysis and use of sex disaggregated data and gender sensitive indicators** on the interconnections between natural resources and livestock management to inform policy making.
- **Ensuring equal benefit from assets and market opportunities** in livestock and related product value, as well as in forest products.

Way forward

All opportunities should be considered to make an additional advocacy for inclusive natural resource management and livestock development, grounded in the concept of inclusive agricultural growth which underpins the CAADP and its 'Sustaining Momentum' framework.

The recent meeting of the Director General of FAO, Mr. José Graziano da Silva, and the Chairperson of the African Union Commission, Her Excellency Dr. Nkosazana Dlamini Zuma, Chairperson of the African Union Commission (AUC) on the margins of the Malabo Summit focused on the need to modernize agriculture and support women and youth in rural areas, and promote women's equitable access to land, inputs and credit and their participation in value chains¹. Her Excellency Madam Zuma, called for a real shift in responding to this wish from African leaders and making it a reality. Indeed there is great potential to strengthen partnership between FAO and all stakeholders involved in natural resource management and livestock development, who are keen to add value and have greater impact through gender based approaches and action. This could be a basis for strengthening the partnership spearheaded by AUC and FAO in the following areas:

- Preparation of joint publications showcasing success stories on gender and livestock to be featured during the 2015 Year of

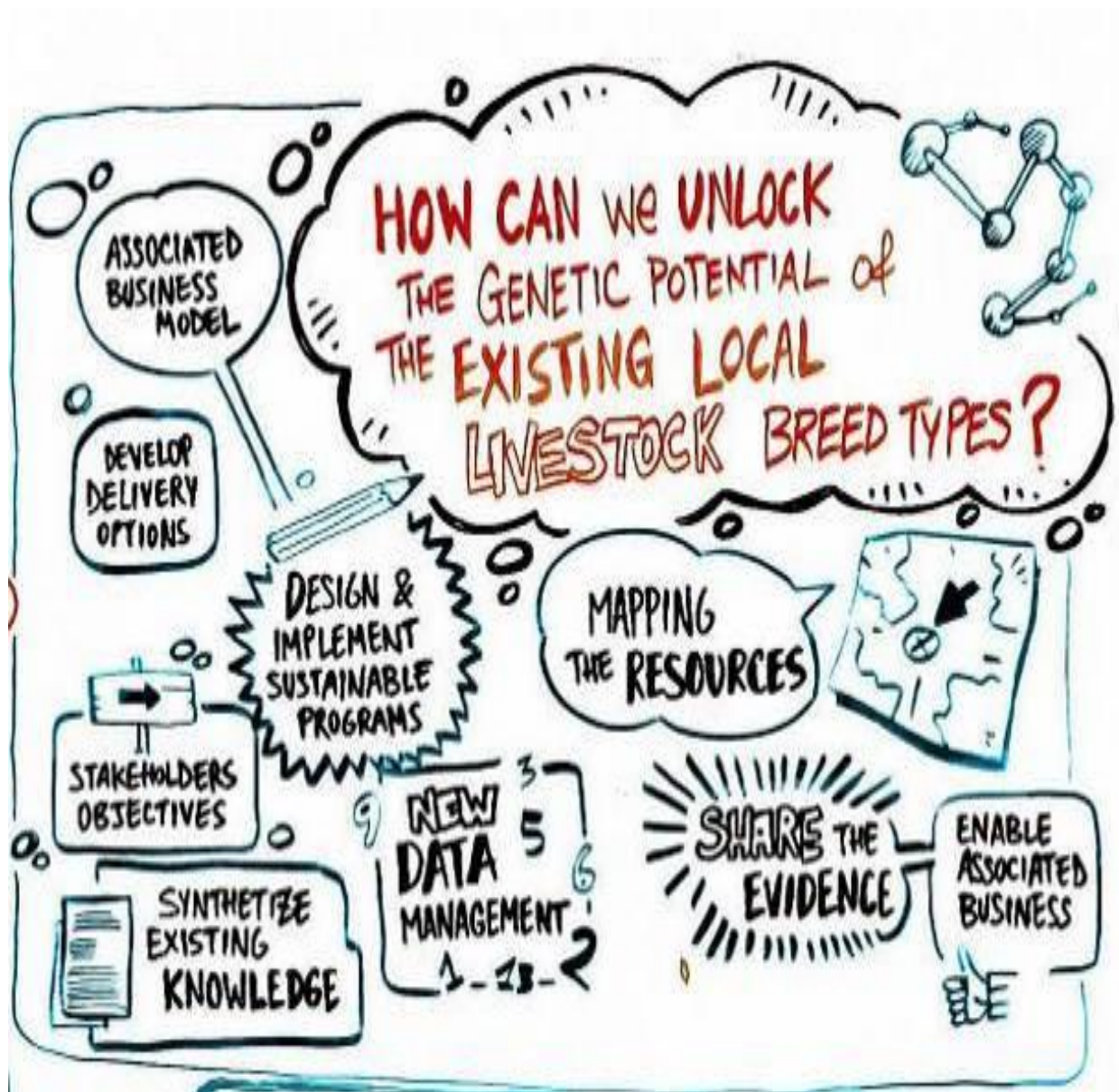
Women's Empowerment and Development towards Africa's Agenda 2063.

- Carry out a gender audit of the livestock and natural resource management components of National Agricultural Investment Plans and organization of high level roundtables to influence policies and financing in the livestock sector, including the livestock policy multi-stakeholders platform.
- Help ensure gender responsive service delivery in the livestock sector while addressing natural resource management, through: capacity development activities targeting livestock professionals; partnership with training institutions to include gender modules into regular curricula; and partnership with research institutions to include gender issues in their research agendas.
- Collection and analysis of gender disaggregated data and information based on gender sensitive indicators to bridge knowledge gaps and inform sound policies.

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¹ <http://www.fao.org/about/who-we-are/director-gen/faodg-news-archive/detail/en/c/237283/>



Gender under consideration?

Image courtesy of International Livestock Research Institute (ILRI)

The Great Green Wall for the Sahara and the Sahel initiative: an opportunity to enhance gender equality in the management of Africa's natural resources

Nora Berrahmouni¹ and Foday Bojang²

Summary

This paper seeks to explain the kind of initial activities being undertaken under the Great Green Wall for the Sahara and the Sahel Initiative (GGWSSI), taking into account gender considerations, to enable a wider implementation of the Initiative. It provides an account of the general concepts of the GGWSSI and the support being provided by the Food and Agriculture Organization of the United Nations (FAO) and the European Union (EU), to the Commission of the African Union (AUC), to catalyse and facilitate the implementation of the Initiative in 13 countries in the Sahara and Sahel zone. The short article brings out the general objectives and the key areas of focus of implementation and the potential it holds for enhancing gender equality in the targeted intervention area. It also gives a view of the future trends, which includes up-scaling of the GGWSSI concept in African, Caribbean and Pacific (ACP) countries under the EU-ACP's support.

Background

The Great Green Wall for the Sahara and the Sahel Initiative (GGWSSI) is an Initiative of the African Union, endorsed by the African Heads of State and Government in 2007 to tackle the detrimental social, economic and environmental impacts of land degradation and desertification, looking at long term solutions to desertification, land degradation, drought, climate change and biodiversity loss, food insecurity and poverty.

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The initiative targets over 20 countries of drylands Africa and aims at improving the resilience of human and natural systems through long term solutions. The Wall is a metaphor to express the restoration of the productive capacity of different land use systems and the enhancement of protective functions of forests and agrosylvopastoral systems of the targeted areas through a combination of interventions based on solidarity of actions between Africa countries and with the international community, across sectors, users and stakeholders, including men and women, elders and youth.

The Great Green Wall is a mosaic of sustainable land use practices including sustainable management and restoration of production systems such as forests, agroforestry, agriculture and pastoral systems for sustainable livelihoods. For example, forests and trees on farms are critical to alleviate poverty and ensure food security in the drylands. In Africa, over 320 million people depend on dryland forests and woodlands to meet many of their basic needs and more than 90% of the population in Sub-Saharan Africa rely on fire wood and charcoal for energy and cooking³ (Chidumayo and Gumbo, 2010).

The GGWSSI recognizes the very active role that women play in natural resource use and management (i.e. agroforestry, wood collection for cooking, restoration of degraded lands, production and processing of non-wood forest products, livestock and rangelands). Women and their families, as well as other members of their communities, depend on these natural resources for their livelihoods and food security. However, despite their hard work and investments and the fact that they are the ones most affected by desertification and land degradation, only limited benefits directly accrue directly to women as a result of their interventions in natural resources management.

The Food and Agriculture Organization of the United Nations (FAO), The European Union (EU) and other partners' support to the Great Green Wall for the Sahara and the Sahel Initiative

Since the beginning and more intensively since 2010, FAO in partnership with EU and Global Mechanism of

³ Chidumayo, E.N. & Gumbo, D.J. (eds). 2010. *The dry forests and woodlands of Africa: managing for products and services*, London, Earthscan (available at: www.cifor.org/publications/pdf_files/Books/BGumbo1001.pdf).

the UNCCD¹, has been supporting the African Union Commission and 13 countries (Algeria, Burkina Faso, Chad, Djibouti, Egypt, Ethiopia, Mauritania, Mali, Niger, Nigeria, the Gambia, Senegal, and Sudan), enabling them to boost the implementation of the Initiative on the ground.

FAO and EU support enabled countries and partners of the African Union Commission to coordinate and facilitate the formulation of a harmonized regional strategy for the Initiative adopted by Africa's Ministerial Conference on Environment in 2012 and the African Union Assembly in 2013. The strategy provides a clear framework for countries to prepare their action plans in a multi-stakeholder process and for partners to step in with their contributions adding to ongoing countries' commitments. Furthermore, a dedicated Communications Strategy to engage different stakeholders (including women) and Capacity Development Strategy and programme were developed to support capacity strengthening and for putting in place the appropriate governance and investment systems to enable communities (and women and youth) have access to and sustainably manage land and water resources. Increasing the stakeholder ownership of processes and resources at different levels is at the core of the Great Green Wall Initiative in general and, in particular, the ten (10) Great green wall action plans that were developed and validated in 10 countries (Burkina Faso, Chad, Djibouti, Egypt, Ethiopia, Gambia, Mali, Mauritania, Niger and Nigeria), Senegal, having had already its action plan while the two others are under finalization.

Moreover, coordination and partnerships at different levels were increased and today one can see achievements on the ground. Implementation of the Great Green Wall action plan in Burkina Faso already started in collaboration with Dori Municipality and WFP in Dori (Burkina Faso). The action focused on the restoration of its communal forest. Moreover with support of the Royal Botanic Gardens of Kew since 2013², and local partners, 120 villages in the trans-boundary areas of Burkina Faso, Niger and Mali were targeted for restoration in collaboration with local communities using seeds and seedlings of 40 native tree and herbaceous species, as well as using

assisted natural regeneration. Consideration of the needs of women, along with other needs, advised the choice of these species.

During the second Africa Drylands week³, that was held from 25 to 29 August 2014 in N'Djamena, Republic of Chad, organized by the African Union Commission and the Government of Chad, in collaboration with FAO⁴, CILSS, UNCCD; SOS Sahel, the Pan African Agency of the Great Green Wall and the African Forest Forum, participants reviewed the advances in implementation of the great Green wall together with the tremendous advances in land regeneration that have already been made by millions of farm families in the Sahel, and in Eastern and Southern Africa, by applying the principles of Farmer-Managed Natural Regeneration (FMNR)⁵ of trees on their farms, and by communities in regenerating their forest and grazing lands through Assisted Natural Regeneration (ANR). It was noted that these practices have created multiple benefits in food security at household level, and restored the productive capacity of these lands and their resilience to climate change⁶. The FMNR and ANR are both being largely used as a cost-effective strategy for the restoration of degraded lands within the great green wall-targeted areas as elsewhere in Africa.

Another example that can be cited, where gender equality has received attention is Senegal⁷ which has been leading and paving the way, with country-own resources and partners' support, for Great Green Wall implementation on the ground. The activities undertaken in Senegal resulted in restoring over 27,000 ha of degraded lands using native tree species of multiple use (non-wood forest products such as gums and resins, which have domestic and commercial value for women, fruits, wood, fodder)

¹ www.fao.org/partnerships/great-green-wall

² <http://www.kew.org/science-conservation/research-data/science-directory/projects/africa-great-green-wall>

³ <http://rea.au.int/en/content/second-africa-dry-land-week-n%E2%80%99djamena-chad>

⁴ <http://www.fao.org/forestry/aridzone/60221/en/>

⁵ <http://www.ifpri.org/sites/default/files/publications/ifpridp00914.pdf>

⁶ <http://rea.au.int/en/content/second-africa-dry-land-week-n%E2%80%99djamena-chad>

⁷ <http://www.angmv.sn>

returning them to production. Through these activities, women groups were enabled to organize themselves in many villages of the intervention areas in Senegal, such as Widou (Senegal), to establish vegetable gardens (jardins Polyvalents) for food production and income generation. Today, FAO is working with Senegal's National Agency of the Great Green Wall and communities concerned, to have these restored lands managed as community based nature reserves with potential benefits for men and women from ecotourism development perspectives.

Conclusions and the way forward

Building upon the progress in implementation and the gains so far in the countries, and as a follow-up to the successful FAO partnership with the EU, AUC and GM-UNCCD, a wider programme (Action Against Desertification¹), in support to the implementation of the Great Green Wall and South-South cooperation in ACP countries was successfully developed with partners and approved by the EU under the 2013 annual action plan (part 2) of the EU-ACP collaboration. The budget benefiting Africa in this programme, will provide a great opportunity for implementation of selected components of the Great Green Wall action plans in six Great Green Wall countries (Burkina Faso, Ethiopia, The Gambia, Niger, Nigeria and Senegal) as well as local, regional and inter-regional level capacity development activities and technical assistance.

The objective of "Action Against Desertification" programme is to improve the conditions and productivity of the agrosylvopastoral landscapes affected by Desertification, Land Degradation and Drought (DLDD) in ACP countries through the implementation of the GGWSSI in the six African countries and South-South Cooperation amongst ACP Countries. Implemented by FAO with a wide range of partners, the programme is now under its inception phase and is expected to focus its action on the following:

- Capacity development of relevant governmental and non-governmental organisations and stakeholders to carry out effective cross-sectoral work including planning, financing, budgeting, implementation, monitoring and evaluation of

sustainable land and forest management and restoration efforts at the landscape level.

- Adoption and implementation of improved sustainable land and forest management practices and technologies by the local communities, governmental and non-governmental stakeholders (including youth, women and civil society) in selected programme intervention areas. Knowledge management, communications and raising awareness of key target audiences and stakeholders (including women and youth on causes and appropriate measures for preventing and combating desertification and land degradation and improving resilience to climate change.

During this inception phase, which will end by May 2015, a gender analysis will be conducted in the project areas of the 6 Great Green Wall countries, where field action will be implemented, to ensure a careful planning and design of country-level activities that take into consideration gender equality in the implementation of the programme.

While it may be a little early to draw conclusions from the work so far undertaken and planned to be implemented, it can be said that African Union Commission and its country members and their development partners, including the 13 implementing countries, FAO, EU and the Global Mechanism of the UNCCD, have demonstrated significant commitment to the ideals of the Initiative and, through their programmes and projects, are very much on the path to improving livelihood of communities, especially through the empowerment of women and youth in the GGWSSI countries.

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Country Focus: Tanzania

Food grows on women's trees in rural Tanzania

Anja Fasse¹ and Etti Winter²

Summary

Household data from rural Tanzania was used to reveal the significance of gender-disaggregated data for food security analysis. Women's tree preferences and tree's relative importance for total income production are a demonstration of women's local knowledge and their vital role in securing food for the family. Despite having access to fewer resources poor women-headed households were more productive than poor male-headed households. Gender-specific livelihood strategies and barriers to entry to lucrative markets were identified. It is postulated that the relevance of analytical tools like the concept of the Social Accounting Matrix (SAM) and economic planning models such as Computable General Equilibrium models (CGE) would benefit from the gender perspective.

Introduction

It is well established that agroforestry can improve food security of rural and urban households and may reduce the pressure on natural resources (Sunderling *et al.* 2005; Godfray *et al.* 2010; Tschardt *et al.* 2012). Recently, the importance of a gender perspective in food security and natural resources management has become an emergent issue (FAO 2013). However, data and analytical research done on gender roles in agroforestry and its related value chains are scarce (Kiptot *et al.* 2014). Results obtained from an earlier study in Tanzania indicate that agroforestry systems, which are well-integrated in the village economy, generate higher income multipliers compared to traditional agriculture food and cash crops for all rural

households (Fasse *et al.* 2014). Targeting poverty, the most pro-poor cultivars are food trees from which households can harvest wood and fruits, either for selling or subsistence (Fasse *et al.* 2014). Starting from these findings the study was specifically interested in a gender-sensitive investigation of livelihood strategies in the study region and the impact on households' food security situation. The following questions are of special interest: Which role does agroforestry play in the livelihood portfolio of especially women-headed households in rural Tanzania, and which particular barriers do women face in gaining access to the market?

Household survey and focus group discussions

The study uses primary data from a household survey in Tandai village, located in Kinole ward, Morogoro district, Tanzania in 2010. The occurrence of trees in farmers' fields, intercropped with food and cash crops, was the guiding selection criterion for inclusion in the study. The village borders a governmental forest reserve, considered to be a "biodiversity hotspot", with restricted access for the local population (Finch *et al.* 2009). After the declaration of the protected area, agroforestry has been promoted on private lands to ensure sufficient supply of wood and non-wood forest products.

In the study village, 32% out of the 1015 households were interviewed using a randomized sampling procedure based on household lists. The survey asked the household head about the economic activities carried out in the study village, with emphasis on farmers' participation in agriculture production of food and cash crops and the utilization of trees. Key information referred to the tree species, as well as to the number, age, origin and purposes of trees managed on household owned properties. In most cases, trees were intercropped with food and cash crops. The trees are normally utilized for one or more of the following purposes: as a measure against soil erosion, for firewood, as host plant (black pepper, vanilla), for cash crop production (clove, cardamom, cinnamon), and for fruit (mango, jackfruit, breadfruit) production.

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Figure 1: Weekly market in Tandai, Tanzania, 2010 Image courtesy of Anja Fasse

Method

A factor and two-step cluster analysis was applied as statistical data reduction method to identify the principal livelihood strategies of different farm households. A livelihood strategy represents a set of income generating activities which depend on available assets such as natural, physical, financial, human and social capital (Brown *et al.* 2006; Soltani *et al.* 2012). Access to family owned assets depends on social norms and can be extremely gender-specific. The identification of group-specific constraints that might trap household clusters in less economically advantageous pathways situations are very important for deriving policy implications (Ellis & Mdoe 2003; Angelsen *et al.* 2011).

Results

Livelihood strategies from a gender perspective

Four different clusters of livelihood strategies were identified (Table 1). Statistics show two groups of

poor households, a women-headed (*Cluster 2*) and a men headed cluster (*Cluster 3*). *Cluster 4* represents the 'average income men-headed households' specialized in cash crops and trading activities. *Cluster 1* stands for the wealthy man-headed households highly specialized in cash crop production and employment in the skilled off-farm sector.

Table 1 show that women-headed households are less endowed with adult labor equivalents shown by the number of adults, natural resources (trees, agricultural land), and considerably less high quality land. Interestingly, they generate the same level of income when compared to *Cluster 3*. This indicates that woman-headed households, although far less equipped with productive and natural capital, are able to produce the same output as those headed by their male counterparts, thus being more effective.

Table 1: Identification of Livelihood Strategies

	Cluster 2 (n=44)	Cluster 3 (n=49)	Cluster 4 (n=126)	Cluster 1 (n=67)	Total (n=287)
Socio-economic Variables					
Female headed households (%)	100a	0b	0b	0b	0
No. of adults (n)	2.84 a	3.55 b	3.38 b	3.61 b	3.38
Income generating Activities					
Major food producer (%)	20.5 a	12.2 b	7.9 b	4.5 c	9.8
Major cash producer (%)	27.3 a	40.8 b	50.8 c	49.3 c	44.9
Unskilled/casual work (%)	36.4 a	100 b	0 c	0 c	22.6
Trade work (%)	9.1 a	2.0 b	15.1 c	14.9 c	11.8
Skilled work (%)	6.8 a	10.2 b	10.3 b	29.9 c	14.3
Distance to market (min)	24 a	41 b	38 b	41 b	37
Natural Capital					
Agric. land (ha)	1.7 a	2.3 b	2.8 c	3.3 d	2.6
Fertile land (%)	14.1 a	22.6 b	30.9 c	34.6 c	27.7
Trees (n)	93 a	137 b	149 b	545 c	230
Outcome Variables					
Per capita income (TZS per day)	663 a	598 a	992 b	1690 c	1045
Subsistence share of income (%)	44.1 a	39.5 b	39.1 b	32.5 c	38.3

Notes: Statistical tests: Non parametric two sample test; binary variables: chi-square test

Different letters a, b, c indicate significant difference of means ($\alpha = 0.10$)

Source: Anja Fasse and Etti Winter, 2010

All household clusters work off-farm to earn additional income, though activities differ. Women-headed households mainly do unskilled seasonal work (36.4%) and carry out trading activities on the local market (9.1%). Only 6.8 % of these households work in the skilled off-farm sector. Men-headed households are more engaged in off-farm employment activities (*Cluster 3*: 100% unskilled; *Cluster 4*: 15% trade; *Cluster 1*: 14.9% trade and 29.9 skilled work). Although women-headed households live much closer to the next local market compared to the middle and rich household cluster, the share of poor women participating in food and cash crop trading is relatively low. Reasons may be the ability of men-headed households belonging to *Cluster 4* and *Cluster 1* to manage transport of own produce to bigger regional markets in Morogoro and Dar es Salaam, where larger amounts can be sold for higher prices compared to village markets.

Figure 2 shows the income composition of the Clusters. The results show that woman-headed households (*Cluster 2*) predominantly work in agriculture and rely more heavily on agroforestry (14%). This is significantly higher in comparison with all other men-headed household clusters. This finding is in line with the hypothesis that agroforestry plays a major role for income generation of women, here mainly the use of firewood and fruits for selling or home consumption.

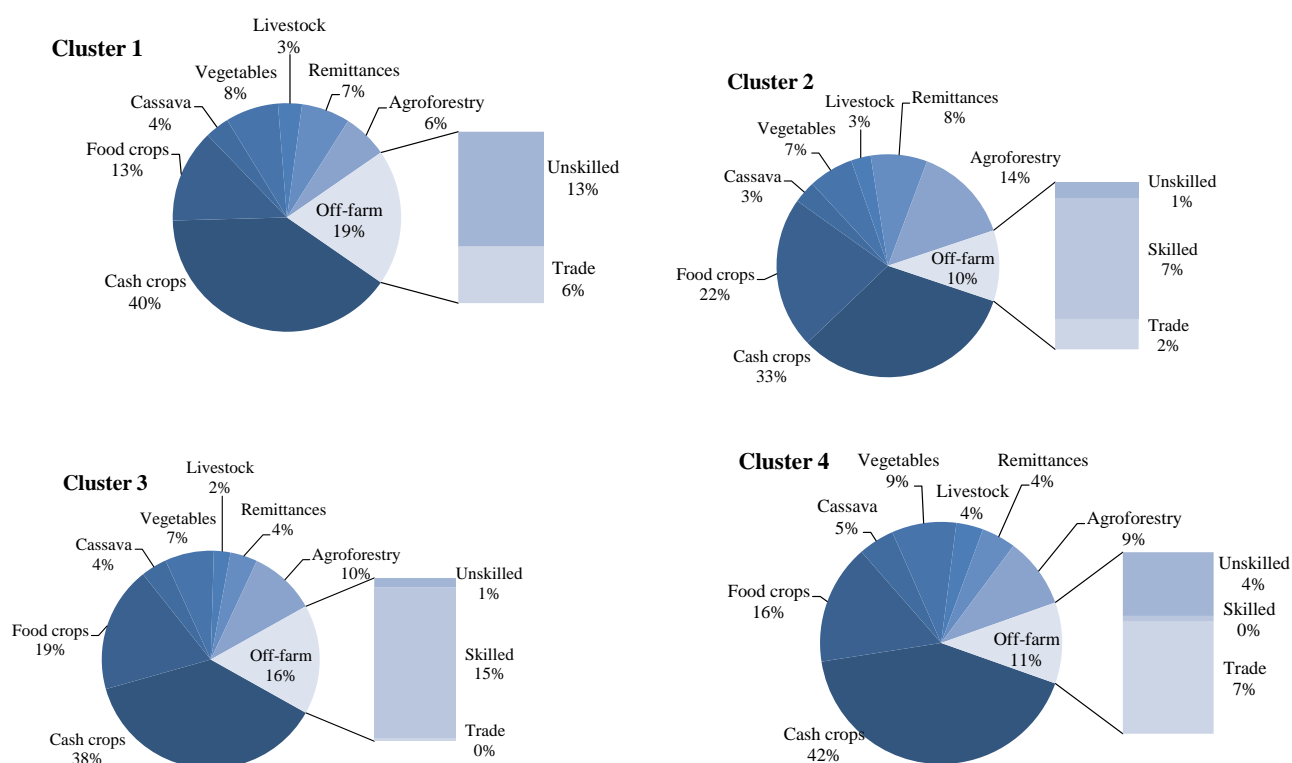


Figure 2: Income distribution of clusters Source: Anja Fasse and Etti Winter, 2010

Tree preferences

Focus group discussions showed that preferences of tree species are to a large extent gender specific (Table 2). Women prefer fruit tree species, which also provide high quality and less smoky firewood, namely *Mangifera indica*, whereas men favor high value timber tree species such as East African Mahogany (*Khaya* spp.). Interestingly, women also prefer *Faidherbia albida*, a leguminous, nitrogen-fixing tree which is dormant during the wet season and drops its leaves in the dry season, and which helps improve the access to nitrogen of associated crops. Its leaves are on the trees and are lush in the dry season and the tree thus provides good shade and livestock fodder during critical periods of drought. It has been demonstrated in various field trials that crop yields under *Faidherbia* are significantly higher than without the tree (FAO 2013, FAO 2014). This highlights women's local knowledge and therefore their vital role in securing food for the family.

Table 2: Tree preferences of households

Trees preferred by women	Trees preferred by men
Mango (<i>Mangifera indica</i>)	Teak tree (<i>Tectona grandis</i>)
Jackfruit (<i>Artocarpus heterophyllus</i>)	East African mahogany (<i>Khaya anthotheca</i>)
Breadfruit (<i>Artocarpus altilis</i>)	Silky oak (<i>Grevillea robusta</i>)
Clove (<i>Syzygium aromaticum</i>)	Cedar (<i>Cedrela odorata</i>)
Ana Tree (<i>Faidherbia albida</i>)	Avocado (<i>Persea americana</i>)
Cinnamon (<i>Cinnamomum zeylanicum</i>)	Jackfruit (<i>Artocarpus heterophyllus</i>)

Source: Anja Fasse and Etti Winter, unpublished survey data 2010

The way forward

The results from Tandai village in Tanzania reveal that gender-disaggregated observation is indeed meaningful for identifying barriers and opportunities to improve food security. The very important finding that despite having access to fewer resources poor women-headed households were more productive than poor male-headed households should trigger more research on the gender role in agriculture in the future. This requires first of all data and ethnographic tools that inform about gender-specific ownership and control of assets and natural resources, as well as intra-household allocation of food and food taboos (Doss 2014). The analysis of the income composition once again underlines the importance of agroforestry for food and income generation for women-headed households. Accordingly, gender sensitive participatory appraisal tools tend to be more suitable for designing gender-balanced interventions. Finally, the relevance of analytical tools like the concept of the Social Accounting Matrix (SAM) could also benefit from a gender perspective by including gender-disaggregated accounts at the village level. Economic planning models, namely regional Computable General Equilibrium models (CGE), derived from such a village SAM can then evaluate respective gender-sensitive interventions and their impact on household groups and members (Winter et al. 2014, Alavalapati, Mercer 2005). These extensions need to be evaluated in future research studies.

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FAO Activities and Results

Women feed households even in time of crisis: Could Gender equality be a key factor in the agricultural development of Africa?

Nadia Nsabimbona¹

Introduction

When we look at most rural and periurban areas in Africa, from planting to harvesting, from storing up and processing to marketing, from the pantry to the plate, we see the same picture from sunrise to sunset: the African woman is at work. That woman, who works the land in regions often subjected to serious food crises, keeps engaging in development activities with multiplier effects. These activities include irrigation, cattle fattening, small ruminants' husbandry, market gardening, income generating activities, petty trade, cooperative credit, corner shops, etc.

On the eve of the deadline for implementing the Millennium Development Goals (MDGs) set by United Nations Member States, the role of women in decision making remains marginalized. Most national and regional guidelines on agriculture and food security now make mention of gender issues, however these are relegated to a separate section devoted to women instead of being integrated in policies and programmes. This is crucial given that according to the same report, women averagely represent 43% of the agricultural labor in developing countries. This ratio stands at 20% in Latin America, and 50% in east and southeast Asia and Sub-Saharan Africa.

Moreover, natural resources management policies do not often mention women as the main users and managers of natural resources. Thus, this paper aims at showing the major role of women in agriculture and natural resources management and to invite cooperatives and the various African States and

Organizations to keep ensuring that gender issues do not impede development on the continent.

The case of Zimbabwe

In the rural areas of most developing countries, women are often responsible for the daily use and management of natural resources. In Zimbabwe for example, they make a difference through community market gardening.

Florence Murairwa Mozorori, a mother of three, is involved in a market gardening project set up with FAO's support in Zimbabwe. According to Florence, the women were the only ones to do all the work as gardening was considered as a job for women. "But when after a year of hard work, we were able to purchase a diesel pump and a small truck to carry our goods to the markets, the men immediately joined us" she said during one of our interviews.

Very quickly, the involvement of men had an impact on the productivity of the community garden and encouraged women to devote more time to their daily activities since they no longer felt marginalized or alone in this type of activity. Furthermore, the fact that men agreed to join them, gave them a feeling of importance because to them, if men were able to support their initiative, it meant that their views and decisions had been considered.

Today, the community produces approximately 200 crates of vegetables a week, earning about USD3,000. "The only problem we have is how to meet the demand. Traders travel 130 km and queue to buy our tomatoes. We do not need to seek out or canvass for customers. They come looking for our produce here." declares Florence.

These women were able to make good use of that plot to not only meet the needs of their households, but also the needs of many others by selling their vegetables to traders. However, they could do better and increase their production to meet the demand if they had additional help in the form of labor or technical support. As is portrayed in this Zimbabwe success story, the men should keep supporting and encouraging the women in their agricultural activities so as to increase their overall contribution to

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sustainable agricultural development and improved natural resources management.

The case of Niger

Notwithstanding all the constraints faced by women in their quest for self-fulfillment and empowerment, they do not give up. This is the case for the women in some parts of Niger, who decided to take their destiny into their own hands using the experience acquired during a five-year FAO programme on small-scale hydropower and food security. This programme has carried out agricultural and social development interventions in West Africa (Water and Food Security Initiative) and has affected 20 000 beneficiaries including 58% of women with a 47% representation on management committees.

The Chairperson of a women's group in one of the communities in Niger reported: "The women in our group are now management experts. Initially, we were just a handful, but today our membership has considerably increased. We have over 9 millions CFA Francs (approximately USD18,000) in our account and we redistribute that money to women who wish to invest in petty trading, market gardening, cattle or sheep fattening. We even purchased a plot to enable them engage in production both with rainfed crops and during the off-season."

However, the picture is not always as rosy for the entire community according to the Director of the Group. She states: "Before the project, we used to struggle a lot because the rains were insufficient and our harvests were insignificant. Today, managing hydro-agricultural infrastructures for food security has changed our lives even though all the women in our village are yet to benefit from its advantages."

These words show that despite FAO's proven interest in extending the limits of the project's economic and social profitability, women are still faced with difficulties in empowering themselves and improving their standard of living. Thus, there is a need to diversify the activities and target more sections of the community in order to enable more women to lift themselves out of poverty.

On the other hand, even though the project in that region mainly impacted women, the men were not left out of its benefits. In striving to ensure food security and improve water resources management in Africa, there is a need to solve the problems of both men and women. In target communities, the agricultural production of men was improved through assistance in the form of better land management skills and construction of infrastructures to facilitate supply and adequate water management for their crops.

The case of Chad

A look at another part of the continent, precisely in the Kanem region located at the far west of Chad, at the border with Niger, under a severe drought (2009), shows how some women have exhibited courage and demonstrated their fighting spirit by striving, in spite of difficulties, to provide their households with the daily bread.

This is the case of Zarah Ali Abdoulaye, a 40-year old widow, mother of three girls and two boys, who tried her best to feed her family and educate her children. An interview with Zarah revealed that she managed to educate only her three oldest children despite her earnest efforts due to the lack of resources after a meager harvest.

In view of the adverse effects of climate change and variability on food production in that region, FAO decided to help through the project '*Appui au maraîchage*¹' with the support of local governmental institutions. That project had a direct effect on about 18,600 vulnerable households, of which 35.4 per cent are families supported by women, and enabled them to diversify and improve their diet through various activities.

That assistance also empowered them to improve their economic status by leading to the creation of an association called "Kher" which means 'Happiness'. Zarah, a member of the new association puts it this way: "We formed a delegation that went to Mao to formalize our constitution into an association. The support was tremendous: FAO first helped us to establish our association with a bureau. For the first time, we were able to perform administrative formalities and to deposit and withdraw money from a bank".

How to promote gender equality?

To achieve sustainable development through agriculture, there is a need to help women farmers to support their households in becoming resilient in the face of climatic variations that impede their efforts. To that effect, men should not be excluded as the lack of gender equality in all food security initiatives would frustrate the efforts made. This is why any similar project targets both men and women. However, we should ask ourselves the following questions:

- What should cooperatives do to help women farmers improve their living conditions

¹ Support for gardening

through enhanced natural resources management? What policies should be adopted by governments in the various African countries to mainstream women's priorities in decision making regarding the environment, and the appropriate management and conservation of natural resources?

- What arrangements should be put in place to address the underlying social norms and practices that restrict their access to social and economic resources in some parts of the continent?

In attempting to answer these questions, one realizes that it is almost impossible to eradicate poverty in Africa without improving the situation of women. This is why the Millennium Development Goals on gender equality (MDG 3) and poverty and food security (MDG 1) are mutually reinforcing. Thus, society would gain from closing this gap in order to increase agricultural productivity, reduce poverty and eliminate hunger and promote economic growth.

Moreover, FAO believes that women farmers could increase their yield by 20 to 30% if they had the same access to productive resources as men, which would increase total agricultural production in developing countries by 2.5 to 4% and would facilitate freeing 150 million individuals from the scourges of hunger.

Twenty years ago, in 1995, the Beijing Conference on Women put gender equality at the heart of development by designing a Platform of Action endorsed by the United Nations Member States. The adoption of this platform effectively contributed to highlighting this struggle, as a result, the UN Member States have included laws and policies that enable women to have some privileges and the right to hold some positions.

Conclusion

In view of the challenges in achieving gender equality in agriculture, nations, financial partners, development stakeholders as well as the entire civil society, have the duty to consider women as a major actor in agricultural development and economic growth in sub-Saharan Africa. At this juncture we need to recall Mahatma Gandhi's wise saying about women: *"To call woman the weaker sex is a libel; it is man's injustice to woman. If by strength is meant brute strength, then, indeed, is woman less brute than man. If by strength is meant moral power, then*

*woman is immeasurably man's superior. Has she not greater intuition, is she not more self-sacrificing, has she not greater powers of endurance, has she not greater courage? Without her, man could not be. If nonviolence is the law of our being, the future is with woman. Who can make a more effective appeal to the heart than woman?"*¹

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NEWS

Effective Climate-Smart Agricultural transformation in Africa: Gender focus a necessity

The Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) made it clear: climate change is happening and vulnerable communities, especially in Least Developed Countries, need to be fully capacitated to be able to adapt to the rapidly increasing impacts and uncertainties of climate change and climate variability. At the time of writing, countries are deliberating at the **COP 20 in Lima, Peru¹** to draft a legally-binding agreement to fight together the menace of climate change and at the same time the Global Environment Facility (GEF) and the Green Climate Fund (GCF) are shifting into higher gears to mobilize the necessary climate finance to respond to the needs of countries to increase their necessary adaptation and mitigation efforts.

The engine of the agriculture sector in SSA lays for the most part in the hands of women farmers and especially the food security status of individual families depend on what these women produce themselves for their daily consumption. As women often don't have the same access as men do to resources such as land, information, inputs, technologies; they are obliged to farm on small degraded pieces of land further away from their homes and highly vulnerable to the impacts of climate change. Research has shown that women often grow 20-30% less food than men for their efforts and the Food and Agricultural Organization of the United Nations estimates that total agricultural output in low-

income countries would increase by 2.5-4%, which could reduce the number of hungry people by 12-17%. So if women would have tailored-made access to innovative technologies, information and resources, they would be the main drivers to improve productivity and enhance the resilience of their livelihoods as well as of the ecosystems they rely on.

But gender mainstreaming in the agricultural sector is not a new thing. For many years now development organizations, civil society and government counterparts have been trying to ensure gender equity and equality have been integrated across their programmes with various degree of success. Climate change is cross-cutting and demands a truly integrated approach (horizontally and vertically) to be able to efficiently and sustainably respond to the continuously increasing impacts and uncertainties. As such the ongoing National Adaptation Planning and the scaling up of Climate-Smart Agriculture across the region provide the ideal base to ensure appropriate and specific focus is given to the different needs and opportunities for the men and women farmers. The Research Programme on Climate Change Agriculture and Food Security has indicated that increased efforts need to be undertaken to collect gender-specific data to better understand the vulnerability, local capacity differences and specific adaptation needs to cope with climate risks and uncertainties.

Capacity development of key staff within the different ministries of gender and agriculture needs to be linked to improved collaboration with national and regional research institutions and those ministries who can guide the necessary financing mechanisms available for climate change actions towards gender-specific actions. Several countries, such as Ghana and Uganda, are in the process of rolling out their climate change strategies and action plans which were developed in a participatory way while providing the right space for dialogue between gender, agriculture and environment ministries. Countries now have to ensure this integrated approach reaches down to the local levels combined with clear budget allocations reflecting the different gender-specific adaptation and mitigation options. Business as usual cannot be any longer the main approach if we really want to tackle global challenges such as climate change.

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¹ The United Nations Climate Change Conference, COP20 or CMP10 was held in Lima, Peru, from December 1 to 12, 2014.[1] This was be the 20th yearly session of the Conference of the Parties (COP 20) to the 1992 United Nations Framework Convention on Climate Change (UNFCCC) and the 10th session of the Meeting of the Parties (CMP 10) to the 1997 Kyoto Protocol.[2] The conference delegates held negotiations towards a global climate agreement. **COP20 website:**

<http://www.cop20.pe/en/>

Culled from:

http://en.wikipedia.org/wiki/2014_United_Nations_Climate_Change_Conference

Agriculture Organization of the United Nations (FAO);
FAO Regional Office for Africa P.O. Box GP 1628,
Accra, Ghana Email: Benjamin.DeRidder@fao.org

Trivial: Why was women's football banned in
1921? Women's football was huge during World War

One, drawing crowds of 53,000 even after the war
had ended. So why did it disappear so dramatically?
You can find the answer to this question at:
[http://www.bbc.com/news/magazine-30329606?](http://www.bbc.com/news/magazine-30329606)



David A. Harcharik –
“The Best of Us All Passed Away”
Eulogy by Mafa E. Chipeta¹ (Malawi)



Many will have heard the sad news that David Harcharik passed away at his home in the United States on December 3, 2014. Best known to all as “Dave”, Harcharik retired as FAO Deputy Director-General in 2007, a post he took up in 2003 after serving as Assistant Director General responsible for forestry from 1995. He had earlier assignments in FAO which are recorded in many other obituaries already published and still coming up;² but most foresters knew him in his ADG days. Jean-Paul Lanly, for long Director of the FAO Forestry Resources Division, probably summed it up best in saying “*The best of us all passed away*” in his message to fellow retired FAO foresters.

Dave’s passing has brought forth an outpouring not just of grief and helplessness but of appreciation of

what he meant as a man and a professional. Dave came to head the FAO Forestry Department in a year when the international community had just decided that the follow-up process to UNCED (Rio Summit) in forestry policy would be located at the UN headquarters rather than at the sector lead agency FAO. Not many years earlier, FAO had been bruised in a turf war regarding leadership of the Tropical Forestry Action Plan and feelings remained raw: it took a man of David’s calm demeanour, coolheadedness, and pragmatism to accept the shock decision and to carve out an indirect but still important lead role for FAO in supporting the post-UNCED forestry dialogue. Many men of rash disposition would have engaged in futile protest and petty territorialism: Dave’s collaborativeness earned him friends personally and ensured that FAO enjoyed continued respect as an institution.

In this as in many other things, Dave displayed an unfailing sense of balance and fairness. Other attributes, all of which make us prefer to celebrate his life more than to mourn his passing, are reflected in a few recent sound bites paraphrased from emails among the FAO forestry retirees:

- Jim Carle (New Zealand): “*Dave was a worldly professional who demonstrated both leadership and humanity - FAO was a better organization for this. We all benefited from his wisdom, his calmness and his sense of humour He encouraged new ideas from younger generations, when morale was flagging during yet another FAO reform process. A forest giant has fallen and created a void, but his nurturing style will ensure that vigorous regeneration will emerge to sustain the forest ecosystem*”.
- Hosny El Lakany (Egypt/Canada): “*Indeed, the best of friends and colleagues passed away*”
- Jean-Louis Blanchet (Belgium): “*When Dave became FO-ADG, a new wind blew in the corridors of the D-building, a new style entered FO. Dave, hello! may I ask you? Helas, for the first time, he cannot answer anymore. We all loved and respected him*”.
- Tage Michaelsen (Denmark/Chile): “*A fine person has passed away. Even in the most difficult of times, it was always a joy to work with and be near Dave. What he did to restore FAO’s standing is unbelievable*”.

¹ Mafa E. Chipeta, Food security adviser,
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Email: emchipeta@gmail.com

² At the time of writing, the following are among obituaries (and photos) on David’s passing already available on-line:
http://www.mywebtimes.com/obituaries/david-a-harcharik/article_004cbcb7-759e-5eac-b895-bf4c50547d22.html
http://www.colonialfuneralhome.com/fh/obituaries/obituary.cfm?o_id=2841702&fh_id=11079

Christel Palmberg-Lerche, for long a colleague of David at FAO in his younger career, has also prepared a draft obituary to be finalized for the Former FAO and other UN Staff Association by retired Unasylya editor Steve Dembner.

- Jose-Antonio Prado (Chile): *"We will remember him as a great forester but even more as the great person he was. .*
- Pape Djiby Koné (Senegal): "Dave will always be remembered as a great Leader, fair and simple, more inclined to detect and encourage talent, than to reprimand. His support to and presence at the 10th Session of the AFWC in Sanbonani, South Africa (1995) created a momentum that boosted both activities of the Commission and more generally, African forestry and wildlife works.

I'll always remember the side meeting he organized during the WFC in Antalya, Turkey (1997) between the South African delegation, the late Jean Clement (former TFAP Coordinator) and myself, representing RAF, to prospect possibilities of deeper involvement of The country of Mandela in reinforcing regional cooperation on Forestry and Wildlife in general, especially on national forest programmes.





Forests and People: Investing in a Sustainable Future

ANNOUNCEMENTS



XIV World Forestry Congress

7–11 September 2015, Durban, South Africa

Join us in Durban: organize an event!

The XIV World Forestry Congress (WFC) is a major opportunity for the world's foresters and forest supporters to gather, share expertise and experiences, and project a vision of the future role of forests in global sustainable development.

Make your voice heard by organizing a side event, networking event, launch or performance on the central theme of the Congress, "Forests and People: Investing in a Sustainable Future", and on topics that align with any of the six Congress sub-themes:

- Forests for socio-economic development and food security
- Building resilience with forests
- Integrating forests and other land uses
- Encouraging product innovation and sustainable trade
- Monitoring forests for better decision-making
- Improving governance by building capacity

KEY DATES

27 February 2015
March 2015

Deadline for submitting events
Notification for accepted events

For more information and to submit an event please visit www.fao.org/forestry/wfc

Extra time for abstracts

The call for abstracts for the XIV World Forestry Congress has been extended and you now have until 30 January 2015 to submit your ideas for papers, posters and videos. We welcome abstracts on the central theme and sub-themes of the Congress.

KEY DATES

30 January 2015

15 February 2015

15 April 2015

15 June 2015

Deadline for submitting abstracts

Authors will receive evaluation of their abstracts and full instructions on how to submit the paper, poster or video

Deadline for submission of posters, papers and videos

Selected authors will receive notification to prepare a presentation at the Congress

For more information and to submit an abstract please visit www.fao.org/forestry/wfc

Practical information

The Congress welcomes the participation of people from all countries, regions and sectors, whether representatives of government or non-governmental organizations, civil society, private companies, academia, scientific or professional bodies, associations, local practitioners, or simply those who have a personal interest in forests.

The Congress programme will be professionally and culturally rewarding, with a variety of sessions, events and dialogue, to ensure that all participants are engaged in defining a vision and strategies for the sustainable future of forests and forestry.

More details including how to register will be available at the main XIV World Forestry Congress website that will be launched shortly.

We look forward to welcoming you in Durban!

Spread the word

Please help spread the word to people you know who might like to learn more about the XIV World Forestry Congress and join the conversation on social media with the #WFC2015 hashtag.

Preliminary information about the Congress as well as downloadable banners and logos can be found on the FAO XIV World Forestry Congress website: www.fao.org/forestry/wfc



Hester Obisi
Secretary-General
of the XIV World Forestry Congress
Department of Agriculture, Forestry and Fisheries
South Africa



**Food and Agriculture
Organization of the
United Nations**

Tiina Vahanen
Associate Secretary-General
of the XIV World Forestry Congress
Forestry Department,
Food and Agriculture Organization

Contact

WFC-XIV-Info@fao.org

Theme and Deadline for Next Issue

The next edition of *Nature & Faune* journal will be unveiled at the upcoming world's largest and most important gathering of the forest sector – the World Forestry Congress (WFC). The editorial board is delighted that the next WFC will be held in the African continent, precisely in Durban, South Africa on 7-11 September 2015. Consequent upon this the journal has set out to explore a theme related to the over-arching theme of the WFC i.e. "Forests and People: Investing in a Sustainable Future" albeit within the context of the African continent. The next edition of *Nature & Faune* journal will therefore feature short articles that address the dominant theme: "Forests and People: Investing in Africa's Sustainable Future".

The journal invites all stakeholders – governmental departments, nongovernmental organisations, academia, research, development community, civil society and individuals working in the forestry sector and related fields to contribute short articles to this edition of the journal. Authors are invited to explore this topic from varying perspectives and share their experiences, challenges and dreams on the future of Africa's forests as they relate to African people and their sustainable future. In this regard, socio-economic and governance aspects of the forests and their impacts on sustainable food security, nutrition and youth employment should be highlighted.

For further insight, in preparing your article(s) the different sub-themes are as follows:

- Forests for socio-economic development and food security
- Building resilience with forests
- Integrating forests and other land uses
- Encouraging product innovation and sustainable trade
- Monitoring forests for better decision-making
- Improving governance by building capacity toward sustainable forest management

Deadline for submitting manuscripts for the next issue of *Nature & Faune* journal is 1st May 2015.



WFC2015
XIV World Forestry Congress

Forests and People: Investing in a Sustainable Future

7-11 September 2015
Durban, South Africa

Guideline for authors, Subscription and Correspondence

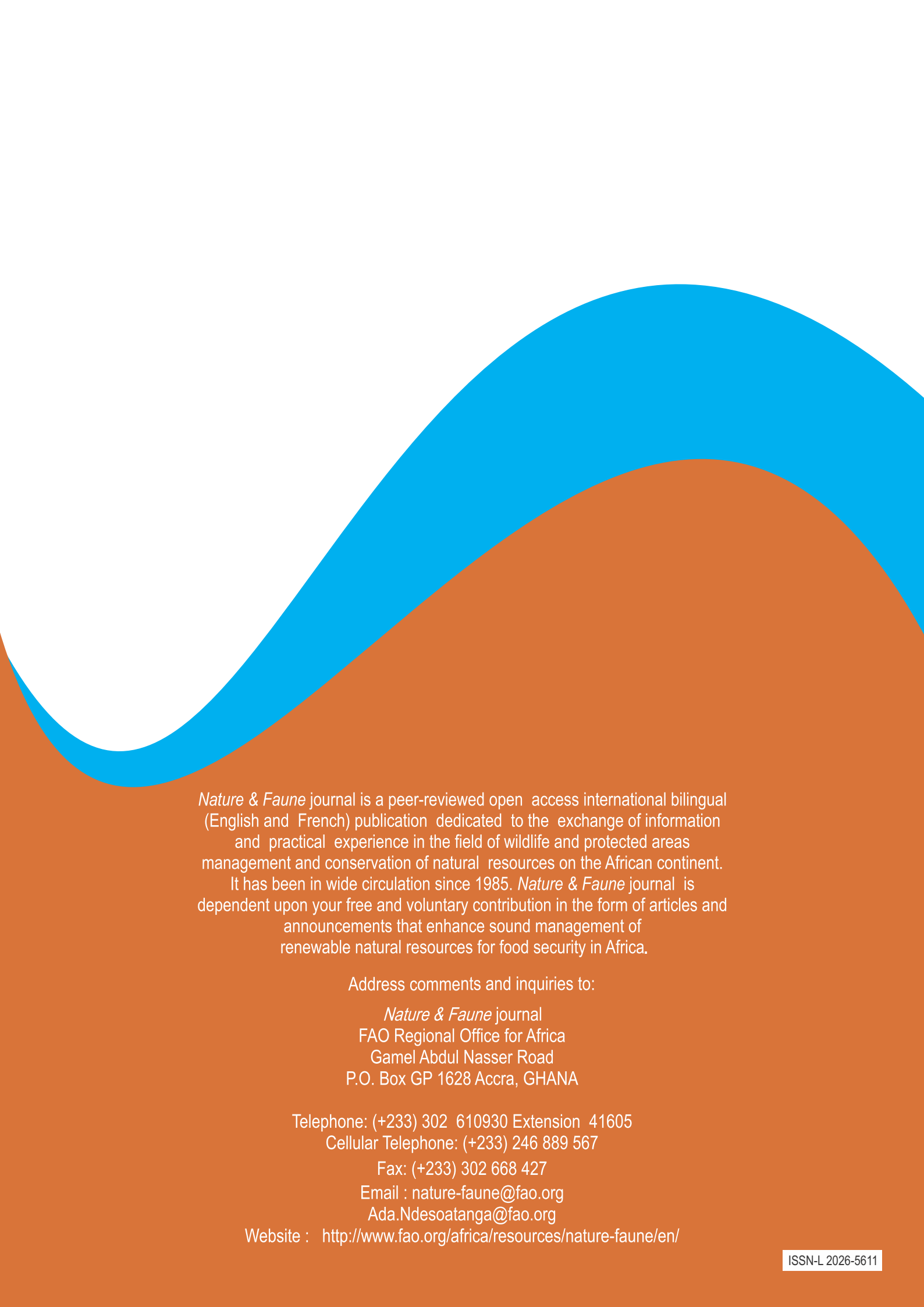
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Nature & Faune journal is a peer-reviewed open access international bilingual (English and French) publication dedicated to the exchange of information and practical experience in the field of wildlife and protected areas management and conservation of natural resources on the African continent. It has been in wide circulation since 1985. *Nature & Faune* journal is dependent upon your free and voluntary contribution in the form of articles and announcements that enhance sound management of renewable natural resources for food security in Africa.

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