



AFRICAN-CENTERED GENDER MAINSTREAMING IN AGRICULTURAL PRODUCTION: A CASE OF TANZANIA AND ETHIOPIA

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ABSTRACT

The gender roles and relationships are not fixed, but change constantly in the light of evolving needs, opportunities, changing environments and societal developments. There are still remarkable differences between the women and men access to assets, decision-making, power and participation in productive and reproductive activities in most societies. The cultural expectations of the roles and behaviour of women and men identified as one of the important options to consider in reducing vulnerability and increase adaptive capacity in the agricultural sector. Such vulnerability differs among women and men, by virtue of their social roles and status. Unlike in western countries, African women are more vulnerable and poor. Women's vulnerability is exacerbated by the cultural mores and political obstacles that regularly limit their ability to advocate for their own needs and take advantage of emerging opportunities. The study revealed that gender cannot be studied and addressed without taking into consideration its specific socio-cultural setting at a specific moment in time. It was indicated that adaptation activities are better expressed through and directed toward those performing particular tasks on the basis of women's and men's involvement, access and control over resources. Such gender differences should be acknowledged in the adaptation process to avoid gender inequality in women, which are more disadvantaged. Gender mainstreaming as a process need to consider local and regional social formation and relations and requires an efficient implementing tools and methods that centred on the needs and wishes of the beneficiaries and harmonized with their specific socio-cultural context.

Keywords: Agriculture production, Gender mainstreaming, Sub-sahara African, Western country.

1. BACKGROUND

Gender issues have been understood and discussed at the global level and the gender mainstreaming concept transplanted to policies in different countries. However, as the concept originates from the west, it reflects Western ideology which may not fit other region. We have witnessed the transplantation of this concept into various sectors in Africa without contextualizing the concept. In many African societies, gender equality is not yet realized, men and women have different roles, responsibilities and decision-making powers. Gender defined as a social differences or roles allotted to women and to men, the roles that are learned as we are growing up, change over time, and depend on our culture, ethnic origin, religion, education, class and the geographical, economic and political environment we live in (European Commission, 2005). It also refers to the socially constructed roles of women and men and to the relationships between them (Vargas-Lundius and Ypeij, 2007). Basing on this definition, it is important, therefore, to understand and take into consideration the gender issues in addressing the vulnerability at a household and community levels in the agriculture sector.

The gender and adaptation issues are emerging as an important and extremely urgent aspect, especially for climate change and environmental policy strategies, programs and projects. Feminization of poverty, existing gender inequalities, men's and women's gendered roles and in the division of labour in society contribute to the gender differences in vulnerability and adaptive capacities (Masika and Joekes, 1997; Ogato *et al.*, 2009). Based on the cultural expectations, roles and behaviour of women and men identified as one of the important options to consider in reducing vulnerability and increasing adaptive capacity in the agricultural sector (Denton, 2002; Vargas-Lundius and Ypeij, 2007). Gender roles, behaviour and the relation between women and men (gender relations) can change over time. Such changes need to provide equal opportunities to access and control social valued goods and resources between women and men. The gender equality needs to promote women's and men's equal opportunities and life chances and not making women and men become the same (Vargas-Lundius and Ypeij, 2007).

According to Vargas-Lundius and Ypeij, (2007) reducing the gaps in development opportunities between women and men and working towards equality between them become an integral part of the organization's strategy, policies and operations. This process of reducing the gaps between women and men is called gender mainstreaming. Gender mainstreaming involve (re) organization, improvement, development and evaluation of policy processes so that a gender equality perspective is incorporated in all policies, at all levels and in all stages by the actors normally involved in policy-making (European Commission, 2005). The process entails an assessment of the implications for women and man's actions, including legislation, policies or programs, in any area and at all levels. Such strategies are important for making women's as well as men's concerns and experience an integral dimension of the design, implementation, monitoring and evaluation of policies and programs in all political, economic, and societal spheres so that women and men benefit equally, and inequality is not perpetuated.

A gender difference between men and women exists in property rights, access to information and in cultural, social and economic roles (Alunga and William, 2013). The differences also exist in vulnerability to extreme events among men and women (Shayo and Martin, 2009). Therefore, adaptation measures in agriculture need to consider such differences for successful implementation. This will involve awareness rising on the importance of gender and the knowledge of possible approaches and to include a gender perspective in adaptation studies, projects and policy making. However, lack of knowledge and available approaches for gender mainstreaming in the adaptation policy framework and strategies limits the explicitly for taking gender issues into account. This paper discusses gender mainstreaming concept and its implementation in agricultural adaptation strategies in sub-Saharan Africa with particular reference to Tanzania and Ethiopia. At the outset, it tries to discuss what gender mainstreaming is, its origin and its implementation in agricultural sectors. The main focus is on assessing the effectiveness of African-centered gender mainstreaming into the agricultural adaptation strategies in Tanzania and Ethiopia.

2. THEORY AND FRAMEWORKS

2.1 Gender mainstreaming contexts

Gender mainstreaming, as a concept, appeared for the first time in international texts after the 'United Nations Third World Conference on Women Nairobi -1985' (Hannan, 2002). This conference was allied to the debate within the UN Commission on the Status of Women (CSW) on the role of women in development. Gender mainstreaming was seen as a means of promoting the role of women in the field of development and of integrating women's values into development work. A resolution on the future work of the Commission on the Status of Women was adopted in 1986, which decided to integrate fully the Forward Looking Strategies into both economic and social development programs (Stratigaki, 2003). In 1987 the CSW, on the basis of the decisions taken in 1986, urged all bodies in the UN system which had not yet done so, including regional Commissions and specialized agencies, to formulate and put into effect a comprehensive policy on women's equality and to incorporate it into their medium-term plans, statements, objectives, programs and other important policy documents.

At the United Nations Fourth World Conference on Women (Beijing, 1995), the strategy of gender mainstreaming was explicitly endorsed by the Platform for Action which was adopted at the end of the Conference (Hannan, 2002; Stratigaki, 2003). The Platform for Action calls for the promotion of the policy of gender mainstreaming, repeatedly stating that "governments and other actors should promote an active and visible policy of mainstreaming a gender perspective in all policies and programs, so that, before decisions are taken, an analysis is made of the effects on women and men, respectively". Even though it does not give any guidelines on how to develop and implement this policy, many countries have adopted a national plan for gender mainstreaming as a result of the Platform for Action.

It was revealed that in recent years, it has mostly been within the different Intergovernmental European organizations whereby the concept of gender mainstreaming has been promoted. It was mentioned in the European Commission's third medium-term community action program on equal opportunities for women and men (Stratigaki, 2003). The Commission also adopted a communication on gender mainstreaming. The main pillar of the strategy for co-operation on gender equality aspects is to incorporate in all areas of policy and at all levels (Alunga and William, 2013). However to be effective gender mainstreaming in African country still has challenges that need to take into a consideration of the local community, believes, norms, culture and social organizational structures. The gender mainstreaming in Africa disregarded other significant factors such as institutions, and the effectiveness of the gender mainstreaming in various sectors had been questioned (Shayo and Martin, 2009). Some people argue that as a gender mainstreaming concept is adopted from the western countries which highly reflect an individualistic approach; it is difficult to implement it in the African context (Menkiti, 1984; Vargas-Lundius and Ypeij, 2007). This is due to the fact that the African approach seems to be more about the social organization or communal basis. Therefore, addressing gender issues and for effectiveness, the mainstreaming supposed to be implemented in the region and local context.

The gender mainstreaming in African countries should be understood and implemented in the African context by considering institution through the agricultural adaptation strategies. The agriculture sector in sub-Saharan Africa

involves a considerable number of people and institutions that will need to mainstream gender in adaptation strategies and agricultural production in a more effective way (Ogato *et al.*, 2009). It was revealed that in most of the African community the gender mainstreaming failed to achieve the targeted objectives and in most cases have been ineffective. Is the question that should gender mainstreaming continue as it was introduced? Do we need to repeat it in the agricultural adaptation? Or mainstreaming should be understood and implemented in local/ regional context by considering institutions.

Understanding the role of institutions (see Vatn, 2005, Vatn, 2008 and Young, 2008) in the effectiveness of the gender mainstreaming in adaptation strategies and agricultural production in Africa is important. Figure 1 illustrates the difference between African view on gender, which moves from society (institution) to individuals and the Western view which moves instead of individuals to society (institution).

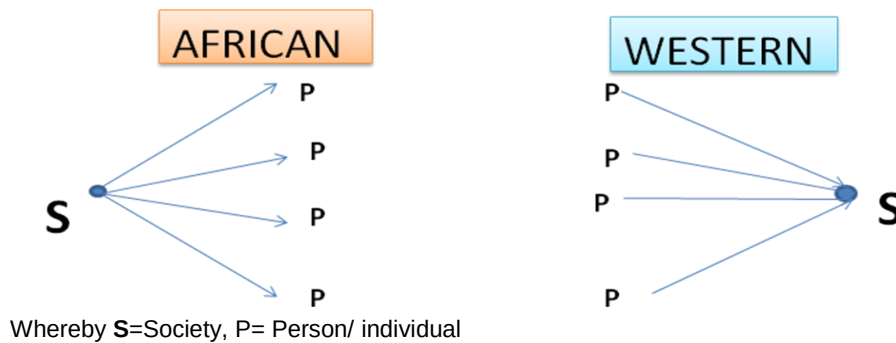


Figure 1 The African and western views on gender and understanding of human society adopts

Source: Modified from Menkiti (1984)

In African context S feeds and has the power to influence and control P while in Western, P feeds and has a power to influence S. In nutshell African households are shaped by a society which has the power to influence the decisions at the local level as it can be seen from the diagram. The African view asserts moves from society to individuals while, in the Western view move instead move from individuals to society (Menkiti, 1984). In the African view, it is the community which defines the person as a person, not some isolated, static quality of rationality, will, or memory. Such factors have an effect on adoption of new knowledge and strategies since it needs to consider the community and individuals for the success of any development strategies or interventions.

Western societies are organized around the ideal of individualism and individual rights in which the Government and society are considered to be created in the defence of one's rights. On the other hand, African societies are based on requirements of duty in which the priority is placed on a person's duty to the collective, and his rights are considered secondary importance. Gender has a great influence on such collective duties whereby male and female perform different roles depending on location and organization structure (Alunga and William, 2013). Therefore, it is important to take into consideration institution when dealing with gender issues in developing adaptation strategies in agricultural production. This has to include factors such as location, the structure of the society and gender differences at the local level.

2.2 Gender analysis frameworks

Gender analysis frameworks used for analyzing gender mainstreaming in adaptation strategies in the agricultural sector. The gender analysis frameworks assume that women and men differ in the goods and services they produce and in their degree of access to and control of resources. Gender analysis refers to a multitude of methods and approaches that look into the roles and relationships between women and men, and their access to and control over resources (Bashaw, 2005). The framework uses gender-differentiated data to identify men and women's contribution to the productive system for which the development assistance project may be designed (ADB, 2002). The frameworks are not only used as a cognitive tool for structuring and framing the interactions and relations between the sex, but also used as a practical tool that cuts across needs assessment, activities and responsibilities, resources, access and control, benefits and incentives analysis, and institutional constraints and opportunities. The gender analytical framework used in this study is presented in figure 2.

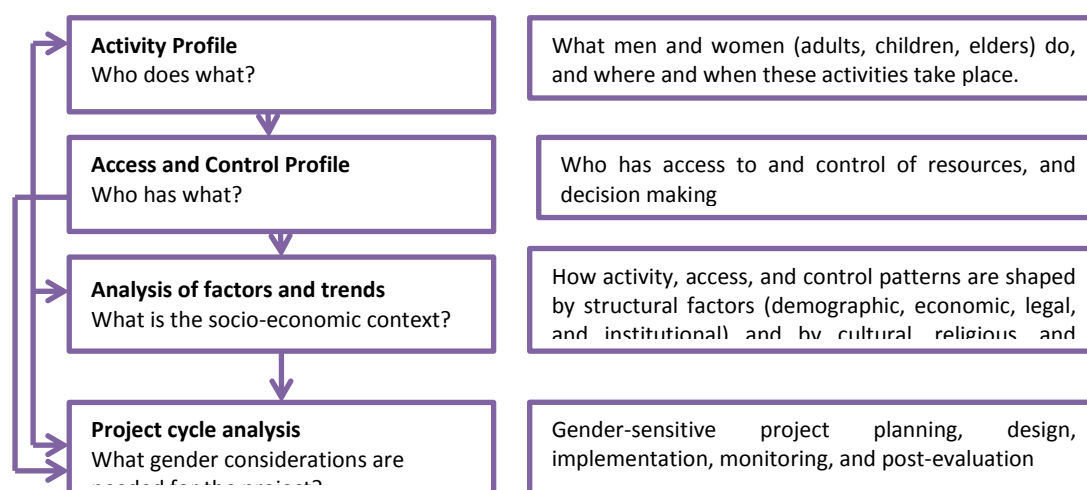


Figure 2 Gender analysis frameworks

Source: Adopted from ADB 2002, "Gender Checklist - Agriculture"

The frameworks recognize that the men's roles, responsibility and access to and control over resources may differ from those of women. Such differentiation helps to describe accurate and efficient of a particular culture or in assessing the effectiveness of project implementation. In addition, it is the systematic way of understanding the impacts of development or adverse effects on men and women to understand the division of labor and valuation. In addition, the analytical framework used in the diagnosis characterization of the agricultural adaptation strategies, identifying opportunity, problems, constraints and determining technologies used in the specific area for specific groups. The results and information obtained from a foundation of recommendation for farmers, researchers and policy maker in developing a gender-centered adaptation strategies in agricultural production.

3. METHODOLOGY

The key research questions and specific question were developed to guide the study to assess the gender centered agricultural adaptation strategies and how it fit in the African context. The focus was on the effectiveness and the need for gender mainstreaming in the agricultural adaptation strategies in Ethiopia and Tanzania. The key question was 'why the region/ location centered gender mainstreaming is important in the agricultural production and adaptation strategies?

The documentary research method was the main methodological approach adopted in this study. This methodological approach used in the collection and review of several documents on gender mainstreaming, adaptation strategies in agricultural production and related policies, strategies, action plans, project reports and programmes. The written texts were identified, categorized, investigated and interpreted to give voice and meaning around the objectives of the study. The relevant documents were purposefully identified with a consideration of authenticity, credibility, meaning and representativeness and relevance of the documents (Mogalakwe, 2006)

Variables and information pertaining adaptation in the agriculture sector, gender involvement and perspective, ecosystem management and institutional arrangement and gender policies were collected and analyzed. A gender analysis framework used in the assessment of adaptation measures in agriculture and the gender horizon in Tanzania and Ethiopia. The framework facilitated on collection and analysis of activity profile and access and control profile on which information used in analyzing the factors and trends influencing activities, access and control. Access refers to freedom or permission to use a resource with some decision, while control refers to the power to decide on how and whether to use and allocate resources. Qualitative content analysis was used in interpreting the investigated documents. The analysis focused on finding underlying themes and relevant parts that used as building blocks of arguments in answering the research questions.

4. RESULTS AND DISCUSSION

4.1 Gender role and Agriculture in Sub-Saharan Africa an overview

Gender issues are prioritized in the international forums. The main focus is about equal opportunity in sharing the benefit of the resources between men and women. Gender equality also is emerging as a key component in the development programs and strategies. According to Tegegne (2004), gender anxiety should be appropriately addressed at all stages of the food and agriculture development process. Through adequate gender analysis of

the existing situation, the participation and benefit of both women and men in production should be realized. To a great extent, the gender role in sub-Saharan Africa is influenced by the natural and social environment that characterize the production systems, households, human relations, politics and even gender relations. Understanding and consideration of such social and natural environment in gender mainstreaming will fuel the achievement of gender equality and enable rural people to reap the benefits accrued from the opportunities offered.

The gender divisions of labour in the rural agrarian community, in Sub-Saharan Africa, characterized by heavy workload of women on which men do not perform caring or other reproductive household tasks. In this society, women has limited control over assets and excluded in the inheritance rights, while men make decisions regarding the acquisition and use of resources. In addition, women have limited participation in local decision-making and sometime men refuse to let women attend public meetings, thus restricting their political participation (Nelson and Stathers, 2009). Unequal power relations and unequal distribution of household income that emerges from this inequity increase burden to women. In most household husbands tend to control family earnings, which is manifested in the fact that the sale of crops and assets are the prerogative of men (Vargas-Lundius and Ypeij, 2007; Gneezy *et al.*, 2009). Such situation increases challenges on gender meneastreaming especially if local institutional structures are not considered for its effectiveness.

Analysis indicated a slight difference that exists between married, unmarried widowed or divorced women in Tanzania. The married women are more culturally respected with less household decision and control over resources while, the unmarried, widowed and divorced women have some little control and a decision over resources in their household depending on the ownership. Also, unmarried, widowed and divorced, have more freedom in decision-making over household cash, however, in other situations echoed in people's accounts with more negative gender outcomes. Such differences are less significant when coming to gender roles and rights at a community level where all women experience and have the same opportunity and role. Unlike in another region in Sub-Saharan African the role and prestige is defined by institutional (Vargas-Lundius and Ypeij, 2007; Gneezy *et al.*, 2009) organizational that defined by culture and norms. Therefore the gender role in adaptation strategies in agriculture needs to consider the general gendered role in its successful implementation. According to Nelson and Stathers (2009) in central Tanzania, gender intersects with age and health as factors in determining vulnerability. It was perceived that children, women, elders and widows were the poorest and most vulnerable to impacts of climate change, because of their increasing inability to secure food and less able to take up labouring opportunities because of their core responsibilities and cultural norms (Gneezy *et al.*, 2009).

The majority of poor women in developing countries is engaged in farming and related enterprises such as animal husbandry and fishing with a critical dependence on the availability and quality of resources such as land, water, forests, and seeds. For example, about eighty percent of women in Tanzania and Ethiopia are engaged in agriculture, contributing about 50 per cent of income based on subsistence agriculture (Bashaw, 2005). While patterns of participation vary, women play important and sometime less critical roles in household survival through their subsistence and income earning activities. In combating rural poverty and increase agriculture production, some households transgress traditional gender roles and redivide responsibilities and resources between women and men. Despite, little attention given to involving woman's development efforts and enabling them to benefit directly from resources, in some areas, both women and men are now income earners. The number of men and women in the farming and income generating activities is increasing. Women are taking up works and practices where men once predominated. Despite their equal share with men in socioeconomic life, Tanzanian and Ethiopia women have little decision-making power and a smaller share of resources and benefits. Such divisions of labour, access and control over resources have effects on adaptation strategies agricultural production.

The study by Vargas-Lundius and Ypeij (2007) revealed that the inequities between men and women in the farming community exacerbated by an education gap. Rural families tend to be keener on investing efforts and money on the education of boys than of girls. It is still common that girls have to choose between education and marriage, and once married and responsible for a household it is less likely that a young woman will continue with the strenuous, time-consuming and often expensive effort involved in education. The poorer women are, the less likely that they have an adequate education that makes it possible for them to participate in formal decision-making.

4.2 Gender mainstreaming and instructional context in agricultural production

The literature on mainstreaming provided attention on gender relations by differentiating men and women in the processes of production and reproduction with little attention on access and control over livelihood activity (Masika and Joeke, 1997). Recognition of gender role in the production process is an important factor for sustainable development and environmental management. Gender mainstreaming makes gender equality part of dominant trends in society so that women and men benefit equally (European Commission, 2005). It looks at every step of policy design, implementation, monitoring and evaluation with the aim of promoting equality between women and men and recognizes that gender is one of the most fundamental organizing features in society and affects our lives. Women have been viewed as naturally privileged managers of environmental

resources with little attention paid to how gender relations systematically differentiate poor men and women in the processes of production and reproduction (Masika and Joeke, 1997). Women have relegated to environmentally based activities and limit their access to other types of livelihood activity. This reflects on the originality of mainstreaming of gender on environmental and development issues without taking into consideration of the organizational and institutional structures and arrangement at a local or regional level.

The great majority of women in rural Ethiopia does not have access to and control over resources, mainly agricultural land (Bashaw, 2012). Even those with access to land ownership do not have actual control over their resources that thwarts the feasibility and actual benefit of control and use of land resources. These causalities have been aggravated by the inadequacies of successive governments' practical concern for appropriate gender approaches and emblematic political and realist dimensions of the social - cultural system. Likewise, in Tanzania gender mainstreaming is constraints with the societal structures that limit women on the high-value production, ownership, decision platforms and political platforms, especially in a rural farming community. For example, the studies conducted in the coastal, southern highlands, western and semi-arid of central Tanzania revealed that men and women have equal opportunity for control and ownership of land (Nelson and Stathers, 2009; Gwambene B, 2011). However, due to cultural aspects that give men power over women, most of the land owned by men, interestingly and those owned by married women are under their husband control, who make a decision on land use.

The structure of agrarian society in Ethiopia has an influence on policy and social-cultural factors, such factors are reflected in women's position and status that formed around a series of cultural and economic factors such as resource use, ownership, control, legal and ideological structures, and education and information (Bashaw, 2012). According to Bashaw, (2012) in order to realize equal control over agricultural land for rural women there is a long arduous and traversing course to travel as long as access to and control over agricultural land remains an underlying source of income. The formulation of a new Family Law in 2000 that aims to substitute the 1960 Family Law, which used to recognize the husband as the head of the family, is an encouraging move (Bashaw, 2012). Also, the agrarian policy implementations, geared towards tackling the problems of food insecurity and poverty, take into consideration the role of women's participation (Ogato *et al.*, 2009; Olson *et al.*, 2010). In Tanzania, the National Climate Change strategies also recognized the role of gender in adaptation and mitigation strategies. The strategies recognize women as vulnerable groups that need a special consideration for the implementation of adaptation and mitigation interventions. This will increase adaptability capacity in agricultural production among women farmers.

A gender analysis framework recognize different role between man and women that are important in adapting to the impacts of climate change and variability. Such differences were significantly revealed within and exist between women's and men's experienced gendered role, cultural / institution formation and because of gender inequalities in access to social and environmental resources (Mehra, 1993; Vargas-Lundius and Ypeij, 2007). For example land and common property resources; command over labour, including allocation of labour time; capacity to diversify livelihood strategies, that involve accumulating savings and market-oriented activities; and decision-making powers.

The gender mainstream should focus on critical questions of the pros and cons of addressing the role and status of women within access to and control over agricultural land and resources (Bashaw, 2005; Vargas-Lundius and Ypeij, 2007). The milestone would initially begin with the planning and implementation of agricultural adaptation measures with more spotlights on the conflicting gender relations and dimension in resource management, ownership and control. It is necessary to examine the different roles of men and women in the region and/or sectoral and local level areas in which a program is implemented. This includes the relations between men and women and how the government or institutional structures and policies shape those relations (Mehra, 1993). Gender relation is better understood through activities performed, period, access to, control over, and ownership of important assets and decision making process and laws that encourage or discriminate against men or women in different situations.

4.3 Gender-based constraints in agricultural production

In agricultural production as in many other sectors in African countries, women are more disadvantaged than men. In Tanzania and Ethiopia, for example, the rural women typically control smaller plots of land, characterize by lower incomes for purchasing inputs such as improved seeds, tools, and fertilizer (Nelson and Stathers, 2009; Olson *et al.*, 2010). Moreover, women are constrained by social beliefs in relation to property rights in sharing profits from crop and livestock sales that reducing their incentive to invest time and money in increasing agricultural production (Denton, 2002; Peterman *et al.*, 2010). Illiteracy, shortage of time, low income, and social beliefs affects women on finding information on improving agricultural production. Also, lack of access to resources and longer time used into household and farm labor constrain the ability of many women to implement new practices with high labor or investment needs (Aguilar, 2004).

Men and women often perform and bring different skills and knowledge to their households, communities and countries. Adoption of such skills and new skills differ among men and women, depending on the type of technology, location and socioeconomic relations. Women also are disadvantaged by low land ownership rates, gender divisions of labour, low access to extension services and credit (USAID, 2010). Though gender analysis the differences and inequalities in access to and control over resources, carry out different social roles, and on facing different constraints and benefits was revealed. Such difference has implications for agricultural production and planning for adaptation strategies. Table 1 below describes gendered roles and practice characteristics over female and their effects on agricultural production.

Table 1 Effects of local gendered role and practices on agricultural production at local level

Role and practices	Women characteristics of local gendered role and practices	Effects on agricultural production
Activity Profile	Work in the informal sector and small enterprises	Less investment in agricultural adaptation measures because of their low levels of capital accumulation, weaker access to credit and information
	Contribute to measures focus on women's practical needs	Management practices are affected by women's practices (e.g. Safe drinking water, fuel wood)
	Work and take care of their children and the elderly	The workloads of women, their children and the elderly increase significantly
Access and Control Profile	Without secure access to and control over resources	The female is left behind and are often the poorest, without secure access to and control over resources (land, water, and livestock)
	Control smaller plots of land	Discriminatory on equal access to the factors of production affects investments in adaptation measures
	Low incomes for purchasing inputs and implements	Lower access to improved seeds, tools, and fertilizer that are used to improve production
	Less control over sharing profits from crop and livestock sales/ without the power to decide on family resources and finances	Reducing the incentive to invest time and money in increasing production, this limits ability to manage risks
	Lack access to information and resources to invest on farm labor	Constrain ability to implement new practices with high labor or investment needs
Socioeconomic context (Participation)	Responsible for food storage and preparation	In times of shortage, women often expected to feed other members of the family before themselves.
	Low education and lack of knowledge on marketing	Affects access to material welfare and Affects efforts on improving agricultural productivity
	Lack of time to meet with agricultural extension	Constrain ability to implement new practices with investment needs
	Lack Participation in project planning and implementation	Affects participation in decision-making processes
Vulnerability and Knowledge	Women are less involved in spatial mobility	Men migrate more often than women both seasonally and for a number of years, while women were not allowed to leave the houses. This increase woman's vulnerability
	Exchange relationships and their role in society	Women are less likely to be able to cope with climatic change impacts

Women work in the informal sector and in small enterprises that are often the worst hated and least able to recover from the effects of disasters (Bashaw, 2005; Vargas-Lundius & Ypeij, 2007). Because of limited access to credit and information, and lack of capital their burden is being increased. The adverse effects of climate change and variability on women's crop and livestock production increase the work, a consignment that poses impacts on their own and their families' livelihood (Hassan and Nhemachena, 2008; IUCN, 2012).

In Ethiopia as it in Tanzania and many other African countries, women take an active role in agricultural production, processing and marketing of food products, but their identity as farmers is not recognized within the agricultural development programs (Mehra, 1993; Ogato *et al.*, 2009). Such situation has led to a series of structural barriers, augmented by local cultural perceptions that have largely precluded women's participation in the development process. Emily (1999) argued that, "women's access to land, technology and decision making power is critically impeded; unless these structural and cultural barriers are actively addressed by agricultural development programs women's location within the agricultural production process will continue to be

marginalized". This will hamper efforts to obtain household food security and adaptation to the adverse effects of climate change at a regional and national level.

The study revealed that in most of the farming community women are disadvantaged over men especially, on control over resources and activities performed in agricultural production that increased the work burden over them. The results suggest that failing to address a gendered factor in the priorities will inhibit agricultural development and food security in the region. It seems that if women were provided equal access to resources and institutional support, they would be able to become more productive. However, there are a number of institutional and social barriers that continue to prohibit women from engaging fully in the production process. In Emily (1999) women in male-headed households and women who head households face different constraints and will require different types of agricultural extension and development interventions. For example, male-headed households generally perform their activities in different ways as female-headed household. Therefore, in developing intervention strategies it is important to consider such distinction between the two groups that have different advantages and disadvantages within a rural community structure. Therefore, to sustain and increase adaptability capacity women may need additional support in order to be able to effectively act upon and access to information, activities and resources.

4.4 The role of institution in gender mainstreaming

Institutions in Vatn (2005) are essential to human coordination though emphasizing on the right things to do and defining when individual as opposed to social rationality is expected. Young, (2008) in addition insists on understanding the role of institutions on global environmental governance. For him institution influences on the course of human-environment relations, though outputs, outcomes, impacts and the sustainability, efficiency, equity, good governance. Institutions figures both as a cause and mechanism for addressing of environmental problems. The institutions had the capacity to function as rationality contexts, that would increase substantially capacity of societies to solve the demanding coordination problems, including gender issues (Vargas-Lundius and Ypeij, 2007; Vatn, 2009). The institution has an enormous contribution to a social settings and community organization. In gender mainstreaming the function of the institution should be considered.

Matching institutions and problems may be just as important as placing problems in an easy-hard spectrum as stipulated by Young, (2008). This form the better understanding of societies for example, according to Vatn (2005) the capacity of a group to respond effectively to a common challenge or solve a common problem depends on certain characteristics of the group itself. In most cases an individual is influenced by group and society that shaped by the institutions arrangement. The institutions are not only influence peoples' preferences, but also structure the decision environment by defining the logic of the situation including gender issues. Institution refers to social arrangements that shape and regulate human behavior and have some degree of permanency and purpose transcending individual human lives and intentions.

Institutional variables range from intra-household behavior to social norms that include information on cultural and traditional practices that impact on men's and women's economic development. Such a comprehensive view of gender-related variables should make the specific focus on policy and adaptation to specific groups depending on location and region. The ideas of gender are integral parts of agricultural development in which its role is more recognized at a global regime and forums with less effort at domestic regimes. In the sub-Saharan Africa gender has not been implemented in an effective way, partly due to the institution and social setup. For example, institution shapes agricultural adaptation strategies where men and women have different roles, responsibilities and decision-making powers on resource use in the production process. Therefore, gender-based adaptation in a specific area will help to sustain adaptation strategies and reduce vulnerability to the impacts of climate change and variability.

The study revealed that due to institution setting women have limited engagement in community politics while men are likely to have more influence over local governance-promoting policies and programs than women and may not support women's rights and priorities (Ogato *et al.*, 2009; Annecke, 2012). Also men typically have more resources and assets than women. Men's savings provide a buffer during tough times and along with other assets make it easier for them to invest in alternative livelihoods. It is apparent that gender roles are socially constructed which are often politicized and manipulated, which then result in the oppression of people. To improve agriculture production there is a need to develop adaptation options which, favour both women's and men's groups. In addition, provision of support through the establishment of women's and mixed-gender organizations, marketing associations or cooperatives, credit and saving unions will ensure effective and efficient in production and market orientation of the production system (Tegegne (2004).

The Government Officials and decision-makers need to interact with rural communities (including women) and involve them in decision making (Bashaw, 2005; Annecke, 2012). Gender mainstreaming not work equally well in every organization; many were designed by specific organizations and are not easy to adapt to other institutional programs. For example, some are more research oriented and are difficult to use in the implementation and others focus on a particular implementation and region. The question should be on how different roles of women and men are accommodated in adaptation strategies? It is important, therefore the policies and strategies, investment plans that support the improvement of access to information and appropriate farm-level adaptation

technologies, access to credit, farmer education and market development that take into consideration gender dimension within a specific location.

4.5 Gender mainstreaming options in agricultural production

The study revealed that environmental security is mediated by gender relations in which women and men have both conflicting and complementary interests and roles in management. Such factors increase the importance of a gender analysis because of significant differences between women's and men's experience of vulnerability and environmental changes. Such difference caused by gender inequalities in access to environmental resources, command over labour, capacity to diversify livelihood strategies and decision-making powers (Masika & Joeke, 1997). The results suggest a need for widening the range of choices available to poor men and women by taking into consideration gender differences in privileges over land and resources to enhance the sustainability of adaptation strategies and development. This will need effective management strategies through participatory approaches that take into account the different activities of household members and the gender interests and incentives.

According to Annecke (2012), there is a casual interrelationship between agricultural adaptation strategies and gender. Adaptation strategies need to recognize an existing gender inequality whereby women are more disadvantaged than men. Women farmers have few alternative income sources, and often are culturally proscribed to cultivate low return or crops for home consumption while men are more favorable with access to more fertile land for growing market-oriented crops leaving women to grow household crops on less fertile land (Annecke, 2012). For example, in Tanzania men's fields are more likely to be planted with banana, maize, round potatoes, coffee and other cash crops, whereas plots owned by women are more likely to be planted with the lower-value sweet potato, sorghum, beans, maize and peas (Peterman *et al.*, 2010). In the selection of adaptation strategies in agriculture, therefore preference, accessibility, affordability and the physiological and social environment are an important factor for success.

Adaptation option further needs to consider the vulnerability in gender perspective where men and women affected differently. In such situation, the development mechanism needs to ensure women's participation in all decision making related to adaptation to agriculture production at all levels and in building an effective alliance for community adaptation. In Tanzania, both men and women have equal opportunity to manage their field and use adaptation strategies, however, due to some strategies are labour intensive (such as terraces, contour farming and benchmarking) that predominantly done by men. Such activities need to consider gender differences and more specific analyses on which technologies or approaches would work in specific locations. This suggests for more substantial intervention on gender issues and understand that women are not only a victim, but also agents of change and possess knowledge and skills that should be acknowledged and tapped to increase resilience.

Interventions in agricultural production would need to increase access to training in entrepreneurial skills, including managing and financing, and training for women entrepreneurs in rural areas. Old and new information that consideration gender differentiation can be important options for identification of interventions and practice for scaled up with appropriate strategies for implementation. Women have less access to education and information that limit them in managing risks in agricultural production. Such management requires new information, skills and technologies such as seasonal forecasts, risk analysis and water-saving agricultural practices. Men are more likely to have access to these resources, the knowledge and the power to use them, and are therefore better equipped to adapt (Ogato *et al.*, 2009). Women often have traditional knowledge that can inform adaptation efforts.

The opportunities for addressing gender inequities in agriculture adaptation strategies and policies and increase livelihood security in farming communities include: Understanding and addressing gender-specific resource use patterns; Recognizing women's vulnerability to poverty and their gender-specific needs in climate change adaptation. This includes identifying women's particular skills and capacities in various aspects of their household livelihood strategies and natural resource management. Another opportunity is strengthening the quantity and quality of women's participation in decision-making at all levels in agricultural production; and gender mainstreaming at the local and regional perspective that consider institutional arrangements.

The study further revealed that women and men are likely to have different needs, capabilities and preferences, and to the extent that these differences are respected. For instance, women are more dependent on informal networks based on everyday forms of collaboration such as collecting water, fetching fuel wood and child rearing. Such informal networks provide solidarity and access to household important resources like water, food and firewood. Men are often engaged in more formal networks, such as project groups and community councils that improve access to economic resources and decision-making or power (Minu and Ulrike, 2009). Such factors are important in developing a local adaptation strategies and gender mainstreaming in agriculture production. The implementation of the location-specific strategies of gender mainstreaming will not only promote effective equality between women and men, but also will result in a better use of human resources, improve decision-making and enhance the functioning of democracy as also stipulated by Hannan (2002). For example, in some Tanzanian villages through better access to technologies and credit, women increased efficiency in their use of energy and mitigate climate change and improved their livelihood.

Adaptation strategies need to recognize the role of women in creating a favourable policy in adaptation strategies as essential pre-conditions for success and sustainability. These should address, gender issues and strive to develop appropriate technologies that are focused on the needs of women and men. It is also essential to focus on training women in the use of technologies, gender concerns, leadership, participation and assertion techniques and business management and investment techniques to increase opportunities for improving livelihood.

5 CONCLUSION AND RECOMMENDATION

In Sub-Saharan Africa, women have lesser command over cash than men and where men control household expenditure, they may not give proper weight to women's interests or priorities. Such situation has practical implications on the different roles and status of women and men in the agricultural adaptation strategies. This will need adaptation measures and potential agricultural adaptation strategies that enhance the status of women and promoting gender equity. Such measures need to define and describe the women's and men's needs in the adaptations and identify cultural, social, religious, and other constraints on women's potential participation.

In strengthening the capacity to adapt in agriculture production there is a need to diversify and widen the range of livelihood choices available to women and men. Such livelihood should take into consideration gender differences in rights of production, land and resources. Such measures need to recognize that men and women's interests in and incentives for agricultural production and environmental resource management differ in many situations including consideration to women's time constraints and workload. An additional effort on increasing awareness of the importance of gender and the knowledge of possible approaches and to include a gender perspective in adaptation studies, projects and policy making is paramount.

Gender policies and strategies need to consider a structure and environment that fit in the regional context for agricultural adaptation strategies and considering various differences that will result in a more effective gender mainstreaming. This need to consider the improvement of women's access to, and control over, natural resources ensure that women have access and control over the resources so as to reduce vulnerability and adapt properly. In an additional development of training and educational programs that provide information about impacts and adaptation strategies, especially in vulnerable communities are crucial.

Gender mainstreaming process requires the development of an efficient implementing tools and methods in the development of agricultural adaptation strategies and activities. Such tools and methods need to be centered on the people who are expected to use them so as to improve their own livelihood and reduce gender inequality. In addition, gender mainstreaming should be adapted to the needs and wishes of the beneficiaries and harmonized with their specific socio-cultural context. Processes of gender mainstreaming, therefore, ought to be allowed to develop in accordance with their own environment and pace. This is more important than ticking off lists with indicators that do not see the necessity of changing the own means of working. Change is a process that needs time, knowledge and resources.

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