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Review article

Women empowerment as a tool against food insecurity in Sub Saharan Africa

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ABSTRACT

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Promoting food production and security continues to be a major challenge in Sub Saharan Africa. This discussion seeks to explore the opportunities and constraints that women experience in accessing and participating equitably in food production and security. It also examines the role of women in improving food production and security. There is an attempt to describe the impact of gender-based discrimination on food production and its implication on food security. Some of the factors which perpetuate food insecurity have been identified as low agricultural productivity due to lack of high yielding inputs, agricultural support services and inappropriate technology. The availability of resources (land, labor, capital, and knowledge) to ensure that women have the means necessary to participate in intensified food production have been inadequate. The discussion, concludes that in the planning and implementation of food production programs to enhance food security, gender sensitive policies should be put in place, such that women become the focal point of food production. It is suggested that women should become increasingly important such that they influence food production and achieve the primary objective of food security.

1. Introduction

In Sub Saharan Africa women grow 80 to 90 percent of food (FAO, 2008) in a situation where food insecurity has worsened since 1970, and the proportion of malnourished has remained within the 33 to 35 percent range (Rosengrant, 2005). One of the major reasons believed to have perpetuated food insecurity is the discrimination against women who are the custodian of food production and food security. The extent to which gender discrimination has thwart attainment of food security goals is a key concern, given the vital role of women play as major players of community food producers. According to FAO (1994) rural women constitute more than a quarter of the world's population, and three quarters of the poor across Africa, that inhabit rural areas. A causal assessment suggests that Sub Saharan Africa has failed to take advantage of the numerical strength of women in the attainment of food security, that, it has lagged behind in food production, while the rest of the world has made significant progress in this regard. Gittinger et al., (1987) describes food security as a function of all factors affecting the maintenance and improvement of per capita food consumption, particularly in poorest countries, including food production, income generation and the capacity to earn foreign exchange. For Food and Agriculture Organization of the United Nations (FAO)(1994), food security exists when all people, at all times have physical and economic access to sufficient, safe, and nutritious food to meet their needs and food preferences for an active and healthy life. Policies which address the issue of women discrimination in land ownership and tenure, should be promoted to fulfill women's potential as food producers and thus enhance food security.

2. Public investment in education and training of women in food production

Farmer training is an important tool widely utilized by development programs in developing countries(Birkhaeuser et al., 1991; Van den berg et al., 2007; Delia et al., 2008). One of the major challenges in food production is the creation of a sufficiently, flexible and diversified education and training system to empower women to produce enough food for the increasing human population. Training is a means of passing on new information and sometimes correct miss-conception concerning agricultural practices, as well as reassure stakeholders that women will improve food production. There is a general agreement on the high priority to be attached to education and training of women in food production as a possible avenue to reduce poverty and enhance food security on the continent (Adebayo, 1997). The World Bank (1996) Cost Benefit Analysis indicated that investment in the education of women has the highest rate of return of any possible type of investment in developing nations. Women's limited access to educational opportunities restrict their autonomy and independence in food production reducing their access to adequate food. Challenging the obstacles that women face in acquiring education and enlarging their access to training opportunities in food production is an essential component of fight against food insecurity.

There is need to set up community based training programs for both women trainers and farmers with well defined goals as a future priorities to alleviate poverty and food security. Adekunle (1978) stated that technical and commercial education broaden the farmers intelligence and lay the basis for vocational training, which enables women to perform farm activities intelligently with full appreciation of their contribution to the final product. Women have many children and thus reduced opportunities for improving their education and seeking employment outside the home. If both men and women had equal schooling and incomes, the economy would grow faster (Mwaniki, 2005) and the overall household welfare will be improved. Higher levels of education mean fewer children and improved opportunities for girls and women (Galor and Weil 1996).

Education and training should promote the sharing of expertise with outside experts but at the same time balancing this with local personnel with good knowledge of women's skills in food production.

Before embarking upon a discussion on training as a priority to support women, systematic courses on planned production should be identified and women consulted. Training methodology should allow the adaptation of food production courses to meet the needs of women and as well as their professional career interests in food production. This should take into account the gender differences and participation of women in different agricultural ventures such as subsistence farming to modern commercial crop and livestock farming.

Training in livestock production at all levels should be aimed at developing women for making a living out of agriculture and working in improving household food and support their communities at large. It is logical to assume that broad based training on key factors in livestock production to meet the local demands. Training women and providing technical equipment in livestock production should be the fundamental bases for acquiring knowledge, skills and techniques for production management and improvement that are needed to translate food production for higher productivity and profitability. Stewart (1975) concluded that education acquired by farmers had a positive influence on farmers labor and income. It is considered, therefore, that the introduction of suitable designed livestock courses at college level will have the benefit of bringing potential women students into direct contact with realities and problems of food production at an early stage and will provide an insight into livestock production. Women graduates churned from colleges should be able to apply principles and tools of management for the husbandry of various classes and types of livestock. On completion of livestock production courses women should have been sufficiently equipped with knowledge on concepts of the subject, interrelationship between traditional scientific methods of food production, roles, constraints and strategies associated with increased productivity.

Consideration needs to be given to more rapid training throughput of women on courses to meet the growing demand for food production. There is need to broaden the curriculum to include mini-livestock species in rural communities for women. In the developed world the direction of food production has changed due to new establishments in biotechnologies. The integration of such issues into the curricula of food production is lacking at tertiary level in most developing countries. Training focusing on aspect of crop and livestock genetic resources, their evaluation and utilization should become an integrated part of training specialists. Public policies and investment are biased against women, lack of training on the part of women has hampered production. Achieving food security requires targeted and deliberate action in the form of comprehensive education and training of women with special focus on the resource poor women. Development techniques, such as group training, can be leveraged to aid in new livelihood development for women living in rural areas who lack the resources necessary for agricultural livelihoods.

Due to new establishments in biotechnologies in crop and livestock production the productivity could be improved. The integration of biotechnologies into the curricula of women oriented community based crop and animal production is lacking in the region. Most women farmer trainers are not well versed on issues of new approaches to livestock and crop production. This has created information gaps on food production in general for women, which means a systematic and planned community based courses on new technologies are called for to enhance food production by women. Sub Saharan Africa should take advantage of the inventions in livestock and crop biotechnologies which provides a technical and operational framework for assisting women farmers to increase production. The training of new young women scientist in new technologies will expose beneficiaries to the demands and challenges in food production. The failure to increase food production through crop and livestock improvement may be a result of lack of imparting new concepts in food production to women. The introduction of marker assisted food production technologies could be a future strategy for increased production. If the women trainers are to effectively tackle the thorny issue of increased food production, must either be a broadly trained professional with knowledge of sociology, economics, land use planning and integrated rural development as well as food production issues. It has been noted that livestock and crop production programs offered by many governments departments disregard the potential of women as food producers. This aspect need possibly to be addressed by introducing gender sensitive food production curricula, and this should be a prerequisite for an effective extension services. Investing more in women education and using training approaches in food production that empower and enlarging their freedoms, the gains accrue to all of the society. Furthermore, education and training should play a key

role of assisting women to have comfortable environment while on the other hand developing abilities and potentials skills and forms of behavior of positive value to their communities. The imparting of skills has been one of the main factors propelling women education as it gears towards making women comfortable and at the same time enabling them to harness the productive resources for which nature has endowed them (Egun, 2009).

Appropriate training procedures are desirable for women as they are eager to improve their knowledge and practices in food production and to have their knowledge affirmed by experts. Training procedures may be varied according to the task at hand. Workshops, seminars, on farm and field demonstration to farmer visits are some of the training procedures which may be used for women. Community based training improves communication and enhance the relevance of research and development issues regarding women and food production. Personnel involved in training women may themselves require training to become more familiar with issues related to gender role differences. Farmer to farmer approach has been successfully used in training women in extension (Ampaire and Rothschild, 2010). Model farmers are chosen on criteria determined by stakeholders. Education level, leadership position, success at enterprise and personality traits have been used to chose model farmers (Muok et al., 2001). Model farmers are required to encourage and train their peers by sharing their expertise.

3. Gender sensitive development policies and programs in food production

Gender equality can make a substantial contribution to a country's economic growth (World Bank, 2012); Abu-Ghaida and Klesen, 2004) and it is the single determinant of food security. Women constraints to food production emanate from unfriendly policies which has compromised the effective participation of women in food production. Public policies and investment are biased against women, inequitable access to land and critical resources and this has perpetuated food insecurity. Growth originating in agriculture, in particular the small holder sector is at least twice as effective if more women are involved. Policy should emphasize the importance of fostering knowledge exchange amongst women for the maximization of tangible and intangible benefits in food production and enhance food security. Appreciation of gender differences can be enhanced with improved information about the range of inequalities and specific constraints facing women in food production. A simultaneous and integrated pursuit of such information and transformation is essential for elimination of gender blind strategies, while complementing men and women efforts and maximize their synergy in food production. Measures should be put in place that help relieve women of their burdens and recognize their largely undervalued contributions to food production systems and enhance food security. Understanding how the concept of gender in development has evolved over time is crucial in analyzing current development initiatives aimed at improving the capacities of those most marginalized in communities, typically women in patriarchal societies. Improving household food production and distribution is to be overcome by increasing the number of women that undertake productive agriculture for themselves and for trade to improve household income. Such a strategy should be accompanied by empowering women and increasing their access to small scale irrigation systems, training of small scale women farmers on green and sustainable technologies. Such new technologies would enable them to continuously produce food even in lean times. Access to credit and finance need to be improved. Marginalized groups especially women are to be harnessed in this drive to commercialize food production in both rural and urban areas. Women themselves may also address some of the problems they face by moving towards commercialization through collective farming for example by forming farming cooperatives to gain access to inputs, markets or other services. If women are involved in commercial oriented food enterprises it means significant gain in income which in turn improves household welfare. In order to craft appropriate and policies and interventions to alleviate food insecurity and hence eradicate poverty; there is need to better understand the critical facets of food insecurity which will translate into poverty eradication. It is impossible to redress gender inequalities in the short term, however minimum policy interventions should do no harm, and ideally they should catalyze a change process for ending gender discrimination and securing women's access to key productive resources. Food insecurity compounded by gender inequality has critical implications for the health of women and their families and communities at large. Women do the majority

of the work related to food production and food security yet, are incapacitated in making independent decisions about issues related to food production. Women's participation in food production facilitate a greater voice in decision making, which in turn leads to the removal of more obstacles that impede their ability to produce food. Decision made at local level are of great practical importance to what matters most to women's ability to contribute to food security. Support needs to incorporate an expanded role of women in decision making regarding the priorities of agricultural research and extension. Integrating gender equality issues and concerns should assume a critical role in food production and enhancing food security.

Establishment of community food based action initiative targeting women may increase food security, particularly those living with limited incomes. Community food action programs could include community guards to support for local food production. Community garden can be centers for community engagement workshops and training in fruits and vegetable production as a foundation to nutritious diets at individual, community and population levels. After training women in their communities will have the knowhow needed to continue the community gardens on their own as part of community food security strategy.

The development of gender sensitive policy options and strategies focusing on Sub Saharan Africa, on assumption that the region is a homogeneous entity, where women are the majority and are the custodians of food production. It has been noted that while equality of treatment between women and men and food security are mutually supportive, gender equality remains an elusive goal in Sub Saharan Africa and promotion of gender sensitive policies is urgently needed. This is on the backdrop that rural women constitute more than a quarter of the region's population, and despite their dually vulnerability, they are the custodians of food production in most communities. Food security is sustainably supported by improvements in food supply and the gradual reduction in dietary deficiencies, thus improving the overall nutritional status of countries' populations. This transformation brings about both qualitative and quantitative changes in production, processing, distribution and marketing of food. Most developmental projects are often designed and implemented without fully understanding the potential for the intervention to help women develop sustainable livelihoods that are necessary for the alleviation of poverty and enhance food security. This lack of consideration often leads to most poverty alleviation programs being inaccessible to women which has result into food insecurity and increased poverty in Sub Saharan Africa.

Involvement of women in food production issues can contribute to reduced vulnerability, increased food security and accelerated economic growth in rural areas of the continent. There is a consensus that Sub Saharan Africa food production need to be increased in order to cope with the increased human population. The existence of other challenges such as climate change will derail the whole effort to produce enough food for ever increasing population. The role of women in food production is discussed and challenges highlighted. The need to invest in research and human resource development to support food production in order to accrue maximum benefit is acknowledged. Strategies which involve women participation on food production should be instrumental in ensuring food security and women involvement should be accompanied by changes in social values and attitude towards women. Repealing regulations which discriminate against women, particularly in land ownership and at the same time initiating programs to boost gender equality in food production, while upgrading education and training for women to be more productive has a positive impact on food security. The relationship between women and the environment revolves around their concerns for providing family food security, fuel, water, and health care (Popin, 1994). Improving household food production and distribution is to be overcome by increasing the number of women that undertake productive agriculture for themselves and for trade. Such a strategy should be accompanied by empowering women and increasing their access to small scale irrigation systems, training of small scale women farmers on green and sustainable technologies. Food insecurity has a severe effect on women who not only assume primary responsibility for feeding their families but also contribute significantly to food production (UNIFEM, 2007) and gender sensitive policies will address this plight of women.

Improving the impact of women on food production requires action by a wide range of stakeholders, women themselves, policy makers and the general public. The degree of awareness of the potential of

women in food production will vary widely amongst different groups of stakeholders. The respective roles of different stakeholders may also vary.

4. Food security and women's access to productive resources

The critical role of women in agriculture and food production have been compromised due to the fact that there has been limited access to land and capital, credit, agricultural inputs, education and appropriate technology to this vulnerable group (Asian Dev Bank, 2013). Food security strategies must be developed to improve women's access to productive resources, women support mechanisms and credit and agricultural services which include research and extension. Given women's crucial role in food production, one of their biggest constraint is the limited access to productive resources. FAO (1994) estimated that closing the gap in access to productive resources such as land, credit, machinery or chemicals could eliminate yield gaps of 205 to 305 among women and men. Agricultural productivity has been said to increase by as much as 20 percent when women are given the same inputs as men (IFPRI, 2002). Despite women's numerical strength and their significant contribution to food production and meeting the nutritional household needs in Sub Saharan Africa, women have limited access to critical productive resources and services. Uwaka and Uwaegbute (1982) and Egbugara (1990) reported respectively that women had no full access to land, a major factor in agricultural production. Suggested that the land tenures systems should be modified to give access to this great percentage of the population. Women in Africa are disadvantaged because they own only 1 percent of the land, receive less than 7 percent of farm extension services, receives less than 10 percent credit given to small scale farmers and are under nourished, illiterate and lack a voice in the decision making affecting their lives. (Howson et al., 1996). This has emanated from the perceived cultural, traditional and sociological roles which are discriminatory. To a large extent, constraints in access to land cannot be dissociated from access to other productive resources that can augment women's productivity—i.e., credit, inputs such as high-quality varieties of seeds can augment farmers' productivity—i.e., credit, inputs such as high-quality varieties of seeds and inorganic fertilizers, farming equipment, and extension services. In Sub Saharan Africa when women obtain the same farm inputs as average male farmers they increase yields for maize, beans and cow peas by 22 percent (Cadles et al., 2004). Better availability of these resources may improve the capacity of women in food production.

The different forms of discrimination women face as well as the complementarity between different agricultural inputs make it difficult to disaggregate the various obstacles women encounter when seeking to improve their productivity as farmers. Removing obstacles women face in accessing productive resources in food production may translate into increased food production. The removal of barriers women face in their roles as food producers, farm workers and care givers is achievable and inexpensive ((ADB & FAO, 2013). Women's potential as food producers can only be realized if productive resources are made available. Women do not own productive resources such as land and livestock, this makes a critical difference to whether they can produce enough food for themselves and families or for sale. Affording women the opportunity to own land, they are likely to invest in land management and produce food and have stable incomes. Food production has been constrained by lack of inputs and credit for women because they do not possess collateral to access bank loans. Food insecurity will persist in the midst of adequate aggregate supplies because of lack of credit opportunities for the resource poor women and the absence of effective social safety nets. There is greater need to provide support and access to credit facilities to women so that they compete on a more equal footing in food production with men. National governments should sought policies to improve provision to women of productive resources such as land, agricultural inputs and credits.

Access to markets is one of the huddles which women need to overcome in food production. This compounded with poor roads which limit access to markets, women can not profitably take their produce to markets due to increasing transportation costs. Women have failed to sell their produce to high end markets due to bad state of roads. Women's roles are generally undervalued and constrained by limitations on their access to resources and market availability. As a result of inaccessible markets the low prices women are paid for their products have negative impact on the resources that the family has to spend on food production, purchases and consumption. The expansion of opportunities for women in

accessing productive resources and enhancing their role as food producers improves their status within communities and can create the necessary social consensus for their role in food production and enhancing food security. Improving women's access to tools, fertilizers and credit and guaranteeing their right to own and access land will have a huge multiplier effect on food security and hunger (FAO, 2013).

5. Gender role differences in food production and security

Empowerment and full participation of women in food production strategies and understanding the role differences in food production will enhance food security. Food production programs should not be gender blind but should appreciate gender needs of men and women to seek to facilitate more gender equitable opportunities. Men should be active participants in strategies for empowering women, this is essential because of its implication on cultural changes requiring redistribution of roles within households. The household and communities overall food needs are very dependent on the work of women. It has been acknowledged that women produce the majority of food which feed communities. The responsibility for ensuring that families' basic needs are met is vested on the women. It would be proper to suggest that women's access to productive resources are the key to assuring effective food production for all communities, Socio-economic challenges that limit women's access to resources are derive from non gender sensitive policies and often they result in denying women their full participation in food production. While men cultivate cash crops, women agricultural work is primarily in subsistence crops (Hyder et al., 2005).The expected result is that by building women's capacity they will be able to directly influence change within these household structures (Khan and Bibi, 2011). A narrow focus on differences between men and women may mask more important differences among women, leading to the flawed assumption that all women have identical resources to draw upon and, hence, the ineffective targeting of interventions(Quisumbing and Pandolfelli, 2012).

The literature shows that women's and men's expenditure patterns differ, with women spending more of their income on the household, in particular, on children (Paxton, 2009). Gender often acts as a determinant for resource allocation, and directly impacts decisions about saving and risk aversion (Paxton, 2009). One way to improve women's decision-making power within the home is to increase women's access to control over material and non-material resources (Boden and Zoe, 1997). National government should devote their attention to the issue of gender role differences and promote household food security through empowering women. Improved productivity is a result of full participation of women in all aspects of food production. Most food production programs ignore the unique or distinct socio-economic role differences of gender. In the context of food production the extra family role of women ought to be a major criterion that merits preferential policies or gender sensitive policies. This may be realized by focusing on women's access to productive resources. Due to women being the majority in most communities food production programs which do not take into account the role of women often run into problems. Dedication to equality and the empowering women may translate into increased food production in communities. Food production strategies which pay attention to gender differences and women's rights and responsibilities are prone to succeed in enhancing food security. Some cultural values impinge negatively on the role of women to efficiently contribute to food production. Women most of the time can not afford to purchase food they need at market prices and therefore social protection through gender sensitive policies are needed. Employment opportunities to provide remuneration work to women and enhance their buying power to buy food is less. This is because there are greater opportunities for men than women, therefore preferential treatment in this regard may be sought. In order to address these differences in negotiating power within the household, it has been suggested that focus needs to be put on women to enhance their internal strength (Khan and Bibi, 2011). The World Development Report (2012) stresses that gender equality can lead to productivity gains, that women's increased control of household resources can improve outcomes for the next generation, and that empowering women as economic, social, and political actors can result in more representative decision making. Inclusive approach where men and women complement each other in optimization of resource use in food production should be used.

6. Women engaging in micro-livestock farming to enhance food security

The demand for livestock protein is predicted to grow faster than production resulting a growing animal protein deficit and food insecurity. The production and exploitation of lesser known livestock otherwise known as micro-livestock or mini-livestock as likely sources of animal protein may close the protein predicted deficit gap. The integration of micro-livestock farming in women food production programs or into the main stream agricultural activities will keep Africa's animal protein supply ahead of population growth. Micro-livestock or mini-livestock has been neglected for a long time despite an increasingly important contribution to protein nutrition and food security among the resource poor rural populations, where the majority are women. In recent years the growth of Sub Saharan livestock production has declined due to a number of factors, this has raised fears that the region may not be able to produce enough livestock products and other commodities to ensure that future populations are adequately fed. The major groups of micro-livestock species which have shown promising attributes for poverty alleviation and food security include chickens (poultry), domesticated rabbits, bee keeping, snail production, rodents , guinea pigs, pigeons and many others found in different parts of the world. The potential for micro-livestock to alleviate poverty and promote food security to help diversify rural livelihoods is believed to be substantial, however no effort has been done to involve women in micro-livestock farming. It is suffice to suggest protein supply side may be adequately addressed through women engaging in micro-livestock farming. Focus on how micro-livestock as a development intervention may contribute to increased capacities of women in the communities need to be intensified. Micro-livestock and their products are significant sources of income for women and consumption in low income communities. Often micro-livestock provide a supplementary source of income stability because they can be easily reared by women. In most poor communities micro-livestock are important sole source of income. They act as one of the very few assets available for women in food production because they need limited space for their husbandry. Limited space can be exploited in rural communities for women to earn income and reduce income variability through engaging in micro-livestock farming. Due to challenges in accessing land as a productive resource to women it may wise to for women to engage in micro-livestock farming. One of the advantages of women engaging in micro-livestock farming apart from need for limited space micro-livestock are smaller in size which entail their production may suit women. Women's choice of micro-livestock enterprise is that they can produce food in a relatively safe, reliable and progressively cheaper ways. Due to their size micro-livestock makes it more imperative then ever to empower women in their ability to carry out the task in animal protein provision and their contribution to food security. By understanding needs and opportunities in relation to a tangible and highly valued livelihood opportunity, micro-livestock rearing projects can better allocate resources to maximize the social and economic benefits of an already existing investment for women. Most micro-livestock are already in use, however at lesser scale in African communities which may call for introducing leverage for ways to make the impacts of the practice more profound and effective in meeting short-term and long-term goals. This entails the recognition and development of on going or desired capabilities in micro-livestock. Understanding the needs of women at the household level within mixed farming systems incorporating micro-livestock should help to create more sustainable and accessible development initiatives in the future. In livestock rearing women are more likely to use small livestock as a form of liquid assets which may be crucial to their long-term saving and management of short term socio-economic shocks. Livestock should be understood as a non-traditional saving strategy that is more accessible to women than structured, formal financial services (Paxton, 2009). Resource poor women subsist on the animal products from homes and farms, if livestock production intervention are sort more attention must be given to livestock that are small sized for their situation. Subsistence rather than for commercial purposes, the micro-livestock contribution that they make in poor households is often overlooked. These small, hardy animals deserve much greater recognition for women empowerment. Given the women's crucial role in food production , engaging in micro-livestock farming will address the household limited protein supply. Providing set of strategies for sustainable micro-livestock farming will also address the food insecurity at all levels.

7. Technology and infrastructure to support women in food production and security

Technological innovations if employed appropriately will continue to allow food production to keep pace with population growth and the rising food demand. Technology adoption of high yielding crops and high productive livestock witnessing success in food production. The unbridled use of technology to improve efficiency in food production and ultimately, women's interests is the most effective components of enhancing food security. However, in spite of abundant modern technologies and guide lines available from the developed world for use in increasing food production, most of the women who constitute the majority in food production ventures cannot adopt these new innovations. This has resulted in failure to produce enough food for individual households and communities at large. Non gender sensitive policies have militated against women in adoption of new technologies. State sponsored research institutions should be part of the drive for technological innovation and food production and food security. On station production units may provide the centers for rapid distribution of superior plant food and livestock genotypes through improved technologies, which as Smith (1988) states, are area model for the role of sophisticated technology in improving livestock breeds and developing food production systems.

The results of new developments in reproductive physiology which makes various manipulations possible opens up entirely new horizons for livestock and crop genetic resources improvement. New technology can achieve immediate improvement through selection of foundation livestock and crop populations and attain faster and more effective performance improvement rates in both crops and livestock genetic resources. Technology based schemes offer effective options to maintain and improve crops and livestock if well functioning infrastructure and capital are provided. The introduction of biotechnological techniques such as crop and livestock gene banks would be ideal but unrealistic under the current constraints of developing countries. Women who produce more than they consume may benefit as technological advances reduce unit costs of production and hence increase profits. However the existing research facilities fall far short of what is required for livestock and crop improvement to enhance food security. Because traditional agricultural research and development systems are not gender-responsive and typically do not consult female farmers and end-users, improved varieties and technologies do not take into account women's needs, preferences,

and resources (Quisumbing and Pandolfelli, 2012). .Most facilities have lived up to their life span and are dilapidated which warrant massive reconstruction. This makes these institutions inappropriate as they are confined to obsolete methods of crop and livestock improvement to increase productivity. Establishment of links with private sector for crop and livestock improvement programs has been unsuccessful because of inability to economically justify the benefit on the part of the state. The use of new approaches in crop and livestock production, remain a theoretical possibility considering the lack of appropriate facilities, the extent of inadequate human resource development and expertise. The absence of formal marketing facilities for crops and livestock has contributed to the persistence of comparatively widespread of household food insecurity. Food production in the developed world has advanced to the current stage mainly due to the presence of poor infrastructure. The advancement in infrastructure has improved food production efforts in developed countries, in contrast to developing countries where infrastructure for food production are lacking resulting in low productivity. However, the need for such facilities is paramount for successful processing, distribution and storage of food.

8. Implications

The study concludes that Sub Saharan Africa is endowed with potential good agricultural space which can be put in good use by involving women to direct food production in a manner that the ultimate goal of self sustenance is attained. There is need to close the gender gap in terms of access to productive resources, education, training and extension services, credit facilities and appropriate technology to maximize production and enhance food security. Public investment in education should empower women in food production to improve food security Women's limited access to productive resources and their insufficient purchasing power are product of a series of interrelated social, economic and cultural factors which need to be addressed. Food insecurity had a negative social consequences for women which are further augmented by issues of gender inequality. Appropriate market oriented interventions that facilitate women's full participation in food production are suggested. Food production interventions with specific gender objectives can be better understood by understanding the history of incorporating

gender into development initiatives. If women are to be effective in contributing in food security discrimination against them should be eliminated and the value of the participation promoted. Awareness of the critical role of women in agriculture is necessary for bringing about sustainable development at a faster pace. Gender sensitive policies in the planning, implementation, monitoring and evaluation of food production initiative are integral to understanding the complex social, cultural, economic, and environmental factors that may inhibit women from fully participating in helping a community to become more self-sufficient in food. Gender blind planning will force women into a subordinate role to the detriment of their own development and that of the societies at large. The impact of gender sensitive policies particularly removing barriers against women to effectively participate in food production and enhance food security should not be undervalued. Removal of obstacles requires more than good intentions and reforms which challenge the gender discriminatory laws. Simultaneously, planning for women's participation does, in fact, improve the likelihood that women will participate and be positively impacted. The recognition of the role women play in agriculture and rural economics is fundamental to agricultural and rural development. Marginalization of women who are the custodians of food production and are the majority provide the explanation for the decline in food production.

Ensuring adequate food supply to the growing population ought to be a major priority for Sub Saharan Africa where majority of the population is estimated to be absolutely poor and malnourished. The micro livestock farming will compensate for the experienced convectional livestock decline in production. This is possible only by pursuing essential forms of management conducive to sustainable exploitation of micro-livestock to meet the target of poverty reduction and food security. Improved supply side will translate to adequate protein supply hence Sub Saharan Africa will not continue to worry about human population growth which has out pace the ability to meet the predicted food demand. It is crucial to recognize the different links to factors which affect food production, while acknowledging that any long term strategy need to address the core issues perpetuating food insecurity. Sub Saharan Africa should respond by adopting creative solutions and appropriate interventions for the empowerment of women in the drive to produce enough food to ensure self sufficiency. Agriculture will continue to play a vital role in the economies of the region for years to come, however the low level of women participation in food production will still contribute to decline, if gender sensitive strategies are not put in place.

References

- ADB(African Development Bank) and FAO (Food and Agriculture Organization)., 2013. Gender equality and food security-Women's empowerment as a tool against hunger, 24 July, 2013.
- Adebayo, J., 1997. Educating women in northern States. *The Nigeria Tribune*, April 2, 1997.
- Asian Development Bank., 2013. Gender equality and food security—women's empowerment as a tool against hunger. Mandaluyong City, Philippines: Asian Development Bank., 2013.
- Birkhaeuser, D., Everson, R.E., Feder, G., 1991. The economic impact of agricultural extension: A review. *Econ. Dev.Cultur. Chan.*, 39(3).
- Cadles, N., Ahmed, A., 2004. Food for education: A review of program impact. Prepared by Millennium Task Force on Hunger. Washington: IFPRI., June, 2004.
- Delia, G., Randolph, T., Oumar, D., Peter-Henning, C., 2008. Training farmers in rational drug use improves their management of cattle trypanosomiasis: A cluster randomized trial in South mali. *Prevent. Veter. Med.*, 83(1), 83-97.
- Egbugara, C.A., 1990. An analysis of the role or rural women in production and processing of selected food crops in Etiti local government area, Imo State, Nigeria. PhD Thesis, Unpublished. Ibadan University, Ibadan.
- Egun, A.C., 2009. Focusing agricultural education for better productivity in Nigeria in the 21st century. *Int. J. Educat. Sci.*, 1(2), 87-90.
- (Food and Agricultural Organization) F.A.O., 1994. Women, Agriculture and Rural Development. Corporate Documents Repository, Economic and Social Development Department. A synthesis report of the Near East Region Adapted from Human Development Report and Country Papers, UNDP, 1994.

- Fent, A., 2012. Philanthropy and Sovereignty: A critical feminist exploration of the Gates Foundation's approach to gender and agriculture development. In: Reclaiming food sovereignty in Africa. Concerned Africa Scholars., Bulletin No 88-Fall 2012.
- Food and Agriculture Organization of the United Nations (FAO)., 2008. Climate change, biofuels and land [FAO-ftp://ftp.fao.org/HLCinfo/Land-Infosheet-En.pdf](http://ftp.fao.org/HLCinfo/Land-Infosheet-En.pdf) (accessed 24 October, 2013).
- Food and Agriculture Organization of the United Nations(FAO).,2011. The State of Food and Agriculture 2010–2011: Women in Agriculture: Closing the Gender Gap for Development (Rome, 2011).
- Galor, O., Weil, D.N., 1996. The Gender Gap, Fertility and Growth. *The American Economic Review* 86(3):374–387. Garcia, M., A. Pence, and J. Evans. 2008. eds. *Africa's Future, Africa's Challenge: Early Childhood Care and Development in Sub-Saharan Africa*. Washington, DC: World Bank.
- Gittinger, J.P, Leslie, J., Hoisington, C., 1987. *Food Policy: Integrating Supply, distribution and consumption*. London: John Hopkins, University Press.
- Howson, C.P., Harison, P.F., Hotra, D., Law, M., 1999. *In her lifetime: female morbidity and mortality in Sub Saharan Africa*. Washington DC.
- Hyder, A.A., Maman, S., Nyoni, J.E., Khasian, S.A., Teoh, N., Premji, Z., Sohani, S., 2005. The pervasive triad of food security , gender inequality and women's health: exploratory research from Sub Saharan Africa. *Afr. Health Sci.*, 5(4), 328-334.
- IFPRI(International Food Policy Research Institute)., 2002. *Reaching sustainable food security for all by 2020. Getting the priorities and responsibilities right*. Washington: DC, IFPRI.
- Mwaniki, A., 2003. *Achieving food security in Africa: Challenges and issues*. Cornell University, US Plant, Soil and Nutrition Laboratory.
- POPIN (United Nations Population Information Network), 1994. *Women Population and Environment in Agricultural and Rural Development Policy Challenges and Responses*.
- Quisumbing, A., Pandolfelli, L., 2008. Promising approaches to address the needs of poor female farmers. Paper provided by International Food Policy Research Institute (IFPRI) in its series Research briefs with number 13.2033 K Street, NW, Washington, DC 20006. <http://www.ifpri.org/sites/default/files/publications/in13.pdf>.
- UNIFEM, 2007. *Progress of world's women*. 2007. New York, UNIFEM.
- United Nations Development Program(UNDP) (2008). *Biodiversity for development*, UNDP, 2008.
- Uwaka, C.T., Uwaegbute, A.C., 1982. The role and contribution of rural women to agricultural development in Eastern Nigeria. *J. Educ. Dev.*, 2(2), 62-70.
- Van den berg, H, Jiggins, J., 2007. Investing in farmers-The impact of farmer field schools in relation to integrated pest management. *World Dev.*, 35(4), 663- 686.
- World Bank., 1996. *World development Report*. New York: Oxford University Press.
- World Bank, *World Development Report.*, 2012. (Washington, DC, 2011).