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BUILDING THE CAPACITY OF RURAL FARMERS TO REVITALIZING NATIONAL FOOD SUSTAINABILITY: CASE OF WOMEN IN YATTA SUB-COUNTY, MACHAKOS COUNTY, KENYA

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Abstract

This study is descriptive which enabled the researcher to capture the realities and practices of the rural farmers as they are on the ground; using a field study adopted; investigation was carried out on how to build capacity among the rural farmers in order strengthen their means, abilities and resilience to enhance food sustainability. Women farmers' empowerment generally sets a direct pathway towards achievement of gender equality in agriculture, poverty eradication and holistic economic growth. The study established that women were the majority in food production in food production, they accounted for 66.4% in the sector. However, even though they were the majority, the problems compromising food productivity seemed to affect them more and more: 62% were unable to access credit; 62% were unable to access information while 81% could not access modern technology and modern practices; 81% were locked out from accessing financial resources; and finally 87% were landlessness. Food security and sustainability tops most of the countries' development agenda world over. However, despite the commitment to enhance food security; scholars and practitioners have already established the problem of insufficient capacities among the rural farmers which has remained as one of the barriers to attaining food security. Although food security is a global issue; the phenomenon of food insecurity has become synonymous with the African problems. Indeed, to some people the possibility of the continent to become food sufficiency remains a mere dream. Adequate capacity building calls for monitoring, evaluation and documenting of the farmers activities in order to record all the lessons therein and the best practices. The pillars of food security include availability of food; adequate access to food whenever people need it; and finally ability to utilize the food. Burgeoning development literature has continued to show that without capacity building, all other development efforts amount to nothing other than failure. Part of the capacity building needed for the rural farmers include analytical and managerial capacities, and general capacities. The local farmers should adequately participate in the process of food production assisted by the government's extension workers or community volunteers who help to fill the gap; other actors include local community leaders, administrators and political leaders.

Keywords: Food security, capacity building, sustainable development, rural community, gender disparity

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Introduction

In the developing countries; rural women remain crucial agents for achieving the transformational socio-economic and environmental changes critical for holistic and sustainable development. Women continue to be the principal providers of food, water and energy at the community and domestic level. Therefore, women's involvement in agriculture is on the increment; the eventuality is pegged on dynamics like: overarching social norms, continual migration of rural males to the urban centers in search of greener pastures and escape from the stinging rural poverty. Worldwide, the food situation is not good. Over 1 billion people globally do not have adequate food; urgent reversal of the trend is urgent for the survival of humanity. As a matter of fact, there is consensus among scholars that the global demand for food is expected to augment spectacularly (Ariga *et al.,* 2011). This fact is worrying because the world population is on a sharp increase, while farming practices and productivity have been negatively affected by the drastic climatic change world over. Against such a harsh background therefore, it has been alleged that about one billion people globally will suffer adversely from the never-ending food insecurity (World Bank, 2014). Since independence, most African countries for some decades have made the attainment of food security and sustainability one of the topmost countries' development agenda. The huge policy commitment is driven by the need to feed their population which is ever on the increase, and thus triggering acute demand for more food production. However, despite the commitment to enhance food security, there seems to be no light at the end of the tunnel in regard to realization of food sufficiency in Africa (Wang'ombe *et al.*, 2013). But, scholars and practitioners in the agricultural sector have already established the problem of insufficient capacities among the rural farmers as one of the critical problems to be addressed. They have noted that without building their capacities, all the efforts to enhance food security will remain a mere dream (Miruka *et al.,* 2012). Consequently. The lack of capacity among the farmers remains as one of the critical barriers to attaining food security compared to other problems like lack of modern technologies; insufficient resources among local farmers and climate change (Jana, 2009).

Although food security is a global issue; the phenomenon of food insecurity has become synonymous with the African problems. Africa has remained a hungry continent with cyclical famines and ubiquitous chronic food insecurity; for example, the evidenced by Adequate capacity building calls for monitoring, evaluation and documenting of the farmers activities in order to record all the lessons therein and the best practices (Bauer, 2011). The pillars of food security include availability of food; adequate access to food whenever people need it; and finally ability to utilize the food. Burgeoning development literature has continued to show that without capacity building, all other development efforts amount to nothing other than failure (Muriithi *et al.*, 2011, Kandiwa *et al*., 2013). Part of the capacity building needed for the rural farmers include analytical and managerial capacities, and general capacities. The local farmers should adequately participate in the process of food production assisted by the government's extension workers or community volunteers who help to fill the gap; other actors include local community leaders, administrators and political leaders (Kipkoech *et al.,* 2007, Odame *et al.,*

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2009). According to Marslen (2015, p.6), the role of women in agriculture is critical, he thus says,

Most importantly, agriculture is central to economic growth and food security. Yet, around the world, it is underperforming as an industry. One of the major reasons for this is the fact that women engaged in agriculture lack the resources and opportunities to make the most productive use of their time. Although women grow half of the world's food and represent 43 per cent of the agricultural labour force in developing countries, they face a common "gender gap" that hinders their productivity. This reduces both their contributions to agriculture and the development of the wider economy. To enhance women farmers' productivity in agriculture, capacity building is critical to enable them overcome their unique and common hindrances

What is capacity building?

Diverse stakeholders in development have established capacity building as the topmost condition for sustainable development: it surpasses the importance of all other development interventions, for example resource mobilization and technological advancement (Nazarene *et al.,* 2007). At present there is no universally accepted definition of capacity building; therefore the definitions of capacity building are unending. However, in the interest of time and space, we can pick one of the many definitions available for the purposes of this paper. According to Mulwa (2004) capacity building has been defined as the efforts that are intentional, coordinated and mission-driven for the purposes of enhancing the knowledge, skills, abilities, competencies and change of attitudes among individuals to better their performance (Fellowship, 2009). When applied to the farmers, capacity building is about enabling the farmer to increase the farmers' abilities, awareness and access of the national food policies and enable them to implement the policies in order to enhance food security (Minot *et al.,* 2002).

Farmers' Areas in Need of capacity building:

Rural Extension and Advisory Services

The purposes of the rural extension and advisory services are to meet the farmers' needs and help to solve their problems for the purpose of enhancing their food productivity. In playing this role, the extension workers help in transferring new technologies to the rural farmers by linking them with research, and relevant institutions (Miruka *et al.,* 2012). The extension workers help in diffusion of knowledge and critical services to the farmers; the newly acquired knowledge is important for the farmers to improve their performance and productivity. In the rural areas, it is common for the farmers to employ the indigenous practices and technology in farming (GOK, 2009). As the extension workers linkup with the rural farmers; they can disseminate new knowledge from research and educational institutions and thus keep the farmers up-to-date by having technology transferred at their doorsteps (Aringa *et al.,* 2011).

The rural farmers are weighed down by divergent problems which left unsolved may end up in compromising the farmers' productivity. By linking with the extension workers, the farmers may

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have their problems solved through various creative ways. For example, the extension workers do efficiently deliver knowledge and information services to the farmers face to face. The practice gains more success because rather than addressing individual farmers, it is easy to address problems of diverse groups of rural people, including commercial farmers, women, resource poor farmers, youth, and non-farm populations (Tripp, 2012; Wang'ombe *et al.*, 2013). The governments of the developing countries invest a lot in sustaining the extension workers. That enables the rural farmers to access important services through special arrangements like cost-recovery system, subsided-fee-services, and finally cost-sharing programmes. The special arrangements enable the needy/poor farmers to access critical services and have their needs/problems met despite to lack of financial sustainability. The need for popular participation of individual farmer or farmers in agricultural projects cannot be overemphasized. The farmers need to acquire relevant skills which boost their participation in the agricultural projects; for example, farmers' participation in the selected model farms and working together with research institutions or NGOs. Therefore, the extension workers go very far in addressing farmers' issues in rural areas which may include: resource and soil conservation; farmers' health; monitoring of food production and security; pre-harvest and post harvest food management to prevent waste (Mulwa, 2004; Kandiwa, 2013).

Science-Based Approaches in Farming

The landscape in food production is dynamically changing since adoption of science-based approaches in farming. Thus agricultural production systems have become more and more complex given the recent scientific discoveries, technological innovations and methodologies (Gautama, 1991). The rural farmers therefore stand a better chance to be equipped to the current challenges they encounter in attempting to address issues of food productivity and nutritional security; improvement of their livelihoods, and coping with the harsh climatic changes that has reversed most of the agricultural gains realized among rural farmers due to issues of lack of access, awareness, competing cultural and indigenous practices, illiteracy and rigidity to embrace new practices that are science based (Bauer, 2011). Indisputably, technological and scientific-based farming practices have seen farmers improve their productivity to greater heights more so because crops are grown more efficiently. With scientific breakthrough and miracles, it is now easy to produce more food on less land than our ancestors did. Subsequently, farmers can get more in irrigation systems because science enables them to access better management of water resource (Miruka *et al.*, 2012). Science thus has enabled the improvement of seeds through cross-breeding now farmers have access to more high yielding and drought resistant seeds unlike what was in their disposal traditionally. Soil performance presently is far superior due to use of inputs like fertilizers, and soil engineering which definitely improves the soil quality. Undoubtedly, farmers' life has greatly advanced through the use of science-based approaches in farming (Tripp, 2012).

Enhancing Pre-and Post-harvest Technologies

The magnitude of the losses incurred in food production during the pre-and post-harvest period is significant; some scholars have put it at 50% (Masariambi *et al.*, 2010). It is therefore important for the rural farmers to adopt pre-and post-harvest technologies to mitigate the high losses of

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food productivity. According to Jana (2009), investment in pre- and post-harvest loss reduction calls for specificity; for example, the farmers need to think of putting up of technical infrastructure right on the farms as individual farmers. The idea is to begin the whole process of pre-and post-harvest process in the farm, such steps takes care of the immense losses that occur in the farms. In trying to enhance access to such infrastructure, the farmers may even establish the technical infrastructure at the community or regional level. Where the infrastructure has been placed in central places, it not only enhances access but also lowers the costs of extension workers who do incredible services to reduce losses (Gautama, 1991).

The whole process of post-harvest has been described by Masariambi *et al.*, (2010) as,

> "Post-harvest handling refers to subsequent processes done immediately after removing a plant or plant part from its growth media till the produce reaches the final consumer in the desired form including packaging, quantity, quality and price. Conventionally the value chain encompasses cooling, sorting, cleaning, packing up to the point of further on-farm processing, or shipping to the wholesale or consumer".

The clear objectives for producing food must be realized in order to enhance food security: reaching the consumer and after that exportation of the surplus. Therefore, by minimizing pre- and post-harvest losses, there is hope for having additional food potentialities to feed the citizens and perhaps for export. It is also notable that the export of surplus food may enhance the payment of critical services to rural areas. Thus, to avoid food losses taking place at the harvesting period, through transport systems, and eventually in processing food; adopting of pre- and post-harvest technologies is important in order to boost sustainability of food productivity (Tripp, 2012).

Research Problem

The paper attempted to investigate the role of capacity building of the rural farmers to strengthen their implementation and revitalizing nation food sustainability

1. To establish the problems facing the rural farmers
2. To establish farmers' willingness to adopt modern technology to improve their food productivity
3. To investigate farmers' awareness of the government's policy in enhancing food sustainability
4. To establish how accessible the modern technology to improve productivity is to the farmers

Study Methodology and Design

This study adopted a field research methodology. A non-probability sampling was used to identify the farmers who live in the Ekalakala Location. That guaranteed working with farmers who live in similar natural settings and relevant circumstances that befit the topic of the study; and are knowledgeable enough to enhance the achieving of the study goals and research objectives. Two groups each comprising 12 members; they were seen as a true representation of

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the rural farmers and their unique characteristics. An interview guide was used to collect the data. The data was coded, analyzed and presented in tables.

The key findings

Farmers' gender

MALE	FEMALE	TOTAL	%
8	16	24	100

The study established that women farmers were 66.4% in the rural areas are the majority while the male accounted only for 33.3% . The reality confirmed findings by other studies contacted elsewhere. Women were expected to be more also because it was established that there are more women than men in rural farming.

R1) what are the problems facing the rural farmers?

Problems that face the farmers	Female	%	Male	%
Lack of access to credit	10	62.5	3	37.5
Lack of knowledge and awareness	10	62.5	2	25
Lack of inclusivity in policy making	13	81	2	25
Lack of adequate financial resources	12	81	2	25
Landlessness	14	87.5	0	100

Rural farmers showed five major problems that affect their work in food production. All the problems affected the women farmers more than they did to the male farmers. For example, the study established that:

a) Women farmers did not own land 87.5%, whereas all the male farmers had land registered against their names. Therefore, landless was a big issue to the women farmers in food productivity.

b) Lack of adequate financial resources was another problem troubling the women farmers; thus 81% did not access adequate financial farmers to boost their farming. Compared to the male farmers, only 25% expressed the same problem. Therefore the problem was more of women farmers' problem than men.

c) Lack of access to credit was a great limitation to the women farmers, 62.5% were not able to access credit; farming is expensive, therefore that obviously compromised women farmers' success in enhancing food productivity.

R2) how are the farmers willing to adopt modern technology to improve their food productivity?

Farmers willingness to adopt modern technology to	Female	%	Male	%

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improve food productivity				
I am very willing	3	18.8	8	100
I am not willing	12	75	0	0
I am somehow willing	1	6.3	0	0

R3) to what extent are the farmers aware of the government's policy in enhancing food sustainability?

Farmers awareness of government's policy in enhancing food sustainability	Female	%	Male	%
I am aware of the government's policy in enhancing food sustainability	3	18.8	8	100
I am not aware of government policy in enhancing food sustainability	11	68.8	0	0
I have a rough idea of government policy in enhancing food sustainability	2	12.5	0	

The government's policy on enhancing food sustainability was only known to 18.8% of the women farmers, 68.8% were not aware at all. Therefore, enhancing food sustainability remains an uphill task due to the ignorance of these farmers.

R4) How accessible are the modern technology and practices to the farmers

Farmers willingness to adopt modern technology to improve food productivity	Female	%	Male	%
Very easy to access	2	12.5	8	100
Not accessible at all	14	87.5	0	0
Very few are accessible	4	25	0	0

The accessibility of modern technology and practices was difficult among the women farmers, only 12.5% of the women farmers accessed the same easily; 87.5% did not access the modern technology and practices at all. Even where some of the modern technology and practices were accessible, only 25% of the women farmers accessed them.

The recommendations

1. To boost sustainable food productivity, the policy makers must respond to the gender problems in the agricultural sector because most of the problems in the sector seemingly affected more women farmers.
2. Creating awareness of the modern technology and modern practices in food production among the women farmers should be emphasized in order to enhance more adoption of the same to enhance food productivity.

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3. Popularizing the Government's policy in enhancing sustainable food productivity among the women farmers is important to enhance commitment to boosting food productivity. Targeting the women farmers in particular is important since they are the majority in the sector. Information and development go together.
4. The government should make accessibility of modern technology and practices equitably to all the farmers. Removing any barriers to the accessibility will boost the access to the same and thus boos food productivity.

CONCLUSION

Making food production and security sustainable is possible: it calls for political will, strategic plan and commitment. The process of enhancing food productivity and security starts with building the capacity of the farmers. Thus, building the capacity of the farmers to boost sustainable food production cannot be overemphasized given the ever increasing population and harsh climatic conditions. Farmers' knowledge, skills, capacity and competencies need to be enhanced. From the four research questions the respondents answered, boosting food productivity depends on the following actions: conclusive response to the gender problems that bring down women farmers' attempts to boost their food productivity, creating more awareness of the modern technology and practices, popularize the government policies, and finally make the same more accessible to all the farmers. Thus, since women are the majority in food production, it is prudent therefore to respond to their unique problems which evidently seem to compromise their ability to enhance making their food productivity sustainable.

FAO

1. Creating knowledge and awareness at the global but also at the country level
2. Advocacy and support to policy making with technical line ministries and other stakeholders
3. Strengthening capacities (individual, group and institutional) on different issues including SDD
4. Implementing projects programs that support equal access to resources, services, voice and representation

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