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Effects of Gender Disparity on Enhancement of Household Food Security: A Case of Food/Cash-For-Assets Project in Kinango Sub County, Kwale County, Kenya

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Abstract: *Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. To achieve this, there is a growing recognition of the need to tap the potential of small scale farmers, a vast number of whom are women, mostly found in the rural areas. One glaring weakness in Kenyan agricultural policy is the omission of the pivotal role women play in the production of the nation`s food supply. While Kenyan women only own one percent of the land they produce the vast majority of the food for their entire families nationwide, they receive less than seven percent of the farm extension services, less than ten percent of the credit given to small-scale farmers, and are generally undernourished, overworked, illiterate, and genuinely lack a voice in Kenyan society. Several food security projects have been implemented in Kinango sub county of Kwale County over the years, but these have registered very little success as the area continues to suffer from perennial food shortages. One of these projects is the WFP's protracted relief and recovery programme (PRRO). The objective of this study was to investigate the effects of gender disparity on enhancement of household food security in Kinango sub county, Kwale County. Specifically, the study endeavoured to investigate whether access to human capital, asset ownership and household decision making processes affect the enhancement of food security in the sub county. The methodology of the study was descriptive design which was used with cross-sectional survey methods. The total target population was 10,000 households from where a sample of 385 was obtained. 5 respondents were purposely selected from food security implementing agencies, making a total sample size of 390. Random sampling procedure was used to select the households within the villages which were a representative sample for generalization. A questionnaire for household heads was used to collect both quantitative and qualitative data. The data was analyzed by descriptive statistics such as computing frequencies and ranking to check on the trends in preferences. Qualitative data was analyzed using SPSS and presented in bar-graphs, tables and charts. The study took approximately three months.*

Keywords: *Gender disparity, household food security, enhancement, human capital, productive assets, decision making processes*

I. Introduction

1.1 Background to the Study

Gender disparity refers to unequal treatment or perceptions of individuals based on their gender. It arises from differences in socially constructed gender roles as well as biologically through chromosomes, brain structure, and hormonal differences. Gender systems are often dichotomous and hierarchical; gender binary systems may reflect the inequalities that manifest in numerous dimensions of daily life. Gender inequality stems from distinctions, whether empirically grounded or socially constructed (Wood, 2005). Gender is not simply about the different roles or activities of men and women but that it is fundamentally relational. The relationships are expressed not only in the specific activities that men and women carry out but also in the way that those relationships reflect "an intricate and change system of cooperation and exchange—and one that is potentially conflictual" (Razavi and Miller 1995). The character of these relationships is shaped by, among other things, social institutions and their ability to structure the distribution of resources, responsibilities, and power and the relationships among actors and these actors' relationships to resources and activities. Given that the final outcome of development is an improvement in human well-being, institutions should be and can be constructed to achieve that goal (Ragasa et al, 2010). Increasingly, analyses of household surveys and national statistical data have shown that high levels of food insecurity are associated with high levels of gender inequality in literacy rates, access to education, and other types of productive resource (Quisumbing and McClafferty 2006; IFPRI 2009).

Food security in Kwale county is determined by several factors including: the quality and quantity of both long and short rains, poor distribution of rains received (time and space), pests/rodents and livestock diseases, inappropriate land use and farming practises. Other factors include: low adoption of modern farming technologies for example, adoption of drought tolerance crops, high poverty levels, over reliance on maize as the staple food, over-dependence on rain fed agriculture, high cost of inputs such as fertilizers and human-wildlife conflict among others (NDMA, 2014). Vagaries of weather contribute to food insecurity in Kinango Sub County although the other factors discussed above are also important. When rains fail or are inadequate for crop and livestock, production yields from agricultural fields dwindle causing serious food shortages in the sub county. The Government of Kenya and its partners, including the World Food Programme, have made deliberate efforts to sustain lives and livelihoods through the provision of relief food or cash incentives to supplement household food needs. The World Food Programme plays a major role in this (KFSSG, 2013).

1.1.1 Gender Disparity and Food Security

Gender inequalities and lack of attention to gender in agricultural development contribute to lower productivity, and higher levels of poverty as well as under-nutrition (World Bank, FAO and IFAD, 2008; FAO 2011). The 2012 World Development report dedicated to Gender Equality and Development warns that the failure to recognize the roles, differences and inequities between men and women poses a serious threat to the effectiveness of the agricultural development (World Bank, 2012).

Donors and national governments alike have increasingly recognized that the effectiveness of agricultural interventions is increased when women's needs are considered in design and implementation (World Bank, FAO, and IFAD 2008; World Bank and IFPRI 2009). According to a report by the Food and Agriculture Organization of the United Nations (FAO), women comprise on average 43 percent of the agricultural labor force in developing countries, ranging from 20 percent in Latin America to 50 percent in Eastern Asia and Sub-Saharan Africa" (FAO 2011). The report argues that reducing gender inequalities in access to productive resources and services could produce an increase in yields on women's farms of between 20 and 30 percent, which could raise agricultural output in developing countries by 2.5 to 4 percent (FAO 2011).

In many countries in Africa, as elsewhere, there has been a significant increase in the percentage of female-headed households (FHH) in recent years. Although African women are disproportionately responsible for providing food to their families both in female-and male-headed households, they have less access to, and control of, agricultural assets and inputs than men. In addition to discrimination in gender difference in observable characteristics, there might be other discrimination, which include accessing different services such as extension and education and unobservable gender difference in characteristics including ability and motivation.

They also face more socio-cultural-political barriers compared to their male counterparts (FAO, 2011). This has greater implications on technology adoption, food security and access to markets. Increasing women's access to land, livestock, education, financial services, extension, technology and rural employment would boost their productivity and generate gains in agricultural output, food security, economic growth and social welfare (FAO, 2011).

1.1.2 Cash/Food-for-Asset Project

Agriculture is the mainstay of the Kenyan economy directly contributing 26 percent of the GDP annually, and another 25 percent indirectly. The sector accounts for 65 percent of Kenya's total exports and provides more than 70 percent of informal employment in the rural areas. Therefore, the agricultural sector is not only the driver of Kenya's economy but also the means of livelihood for the majority of Kenyan people (ASDS, 2010). Agriculture ensures a constant food supply and food security for the population, this ensures that the work force is fed with energy to supply labour to industries and other economic sectors. Above all it contributes towards rural-urban balancing; through the creation of employment in the rural areas it discourages rural to urban migration and this helps in the better distribution of incomes and balanced use of social amenities. Through all this multiplier effects agriculture is perceived to be an engine of economic growth and development (KNBS, 2013).

In Kenya, the government and other partners including the World Food Program conduct food security assessments, under the auspices of KFSSG, after every rain season to determine the quality and quantity of the rains and assess their impact on crop and livestock production and other relevant food security factors, such as access to water and socio economic conditions and to obtain adequate and reliable information for projecting food security needs for communities for six months in terms of food and non-food items (NDMA, 2013). Such assessments have also been conducted in Kwale County. From these assessments, vulnerable communities are identified and the numbers that need food relief assistance are established. The government and the World Food Programme initiated a food relief programme in 2007 called the protracted relief and recovery operation (PRRO) program which enabled communities to access food during periods of food shortages and create assets

at the same time. This mode of relief assistance is called food-for-assets (FFA). In this program households that require assistance are identified and targeted during food security assessments. Kwale County has been in the PRRO programme since 2009.

Under this program, the vulnerable households/communities identify projects which they will work on for a period of six (6) months until the next assessment, which is done after each rain season as indicated above. Projects that have been implemented in Kinango sub county in Kwale county include water harvesting (water pans, zai-pits and sunken beds on group or individual farms), pasture production, rural market access roads, environmental conservation (nursery tree establishment and tree planting. Targeted households work on one particular project for twelve (12) days in a month after which the work norms are calculated for purposes of compensation, usually in terms of food or cash (KRCS, WFP, GoK, 2012)

Over the years several micro-projects have been implemented in Kinango sub-county under the PRRO program, ranging from agricultural projects, water pans, access roads and environment conservation. The targeted households participating in these projects are classified into areas called food distribution points (FDPs), each comprising of a specific number of households ranging from 150 – 280 depending on the number of beneficiaries being targeted in a phase. Each FDP implements one or two micro-projects where each targeted households participates in. Targeted households usually send their members to work in these micro-projects in order to attain the required work norms (12 days per month) to qualify for either cash or food at the end of the month (Kinango DSG, 2013).

1.2 Statement of the Problem

Despite the deliberate efforts by a number of projects and programs targeting criteria to have a 50:50 gender representation as stipulated in project plans, more women show up in project sites as compared to men and the youth. This can be attributed to the centrality of food and water to the woman. In a mid-term project evaluation report, the Kinango DSG notes that in order to ensure representation of men and women, the communities should be sensitized on the role of each gender in the enhancement of food security (Kinango DSG Report, 2013).

A generally accepted observation holds that the level of gender disparities between men and women in the household and at a community level remains high despite the attempts to attain gender equality (Kabeer, 1994). Additionally, the perception of gender inequality among men and women suggests that women are likely to be disproportionately represented in the societies. Deepening disparities across genders could lead to lack of access to resources which could consequently lead to women's poor participation and contribution in the household livelihoods diversification and enhancement of food security. (Kabeer, 1994; Wombeogo, 2007)

Indeed because of gender disparity, the proportion of women working in agriculture and food security projects is not only high but has been growing over the years in Kinango sub county. Men and youth in much greater extent than women have been moving to non-farm jobs. Due to the labour-intensive nature of the food security micro-projects, women only manage to cultivate and operate small farms resulting to low yields. The surface water structures excavated by the women also are small and therefore manage to dam low quantities of water during the rain season. Due to lack of resources in the form of farm pre-requisites and low labour availability productivity from the cash/food-for-asset project has been poor in the sub county. This situation has continued to prevail because women are still suffering from lack of opportunities, access to resources, security and a voice in decision making processes, eventually affecting their ability to enhance food security in the sub county (Kinango DSG Report, 2013).

To successfully promote the enhancement of food security in the sub county there is need to re-evaluate gender roles. This study sough to examine the effects of gender disparity on the enhancement of household food security in Kinango sub county, discuss approaches to mitigate this disparity and provide suggestion for engendering future food security projects in this area. The lessons learned after conducting the study will assist the World Food Programme, the government and non-governmental organizations (NGOs) to design community food security projects that encourage all members of the household to participate in.

1.3 The Objective of the Study

1.3.1 Broad Objective

The overall objective of this study was to examine the effects of gender disparity on the enhancement of household food security in Kinango sub county in Kwale county.

1.3.2 Specific Objectives

To operationalize the main objective of the study, a set of four specific objectives were formulated as follows:

1. To determine the effect of human capital on enhancement of household food security in Kinango sub county.

2. To determine the effect of asset ownership on enhancement of household food security in Kinango sub county.
3. To determine the effect of household decision-making processes on enhancement of household food security in Kinango sub county.

1.4 Research Questions

The research questions which the study intended to answer include the following;

1. To what extent does asset ownership have an effect on enhancement of household food security in Kinango Sub County?
2. To what extent does human capital have an effect on enhancement of household food security in Kinango Sub County?
3. To what extent do household decision making processes have an effect on enhancement of household food security in Kinango Sub County?

1.5 Significance of the Study

There is an intrinsic gender issue where food security is concerned. One of the ways in which this is manifested is in the shift from woman-lead leadership to man-lead leadership as one moves from subsistence farming to market driven farming. Women are important as food producers, managers of natural resources, income earners and caretakers of household food security. Agricultural productivity has been said to increase by as much as 20 percent when women are given the same inputs as men (Mwaniki, 2003).

The purpose of this study was to create awareness to the researcher and other stakeholders on how gender disparity affects the enhancement of food security in Kinango sub county, Kwale county:- suggest approaches and strategies to stakeholders to mitigate gender disparity in Kwale, will help engendering of food security projects; This study created in the researcher a keen interest in the research, sharpened his research skills and also helped to understand the gender disparity factors that affect the enhancement food security in Kwale County. This study will serve as reference material to other students who will be researching on the same field in the future. It will act as an eye opener to the scholar to be as reference materials. Although there are many studies that attempt to theorise the relationship between gender inequality and food security, the study will added a local (Kwale county) perspective to the process of engendering of food security initiatives. The lessons learned after conducting the study will assist the World Food Programme, the government and non-governmental organizations (NGOs) to design community food security projects that encourage all members of the household to participate in.

II. Literature Review

2.1 Food Security

Food security is a broad concept that includes issues related to the nature, quality, food access and security of the food supply (Iram and Butt, 2004). Of the several crises looming before us globally, perhaps the most significant, of the longest duration, and the most endemic, is the crises of food security and chronic world hunger. These are issues of longstanding concern and the alleviation of hunger is one of the most important millennium development goals. But this crisis has an added urgency with developments in recent years, such as the rise in global food prices; the shift in global cropping patterns from food crops to biofuels in major food exporting countries; long-standing governmental neglect of agriculture, especially in terms of infrastructural investment, in many developing countries; and the looming threat of climate change and its expected adverse effect on food production. These developments are both cause for serious concern and an opportunity for change, since there is now a renewed global interest in agriculture to reduce constraints to economic growth and improve food security. There is also a growing recognition of the need to tap the potential of small scale farmers, men, women and the youth, a vast number of live in the rural areas (Agarwal, 2011). This therefore means that there should be no gender disparity in the enhancement of food security.

2.2 Gender and Agricultural Productivity

Gender inequalities and lack of attention to gender in agricultural development contribute to lower productivity, and higher levels of poverty as well as under-nutrition (World Bank, FAO and IFAD, 2009; FAO 2011). The 2012 World Development report dedicated to Gender Equality and Development warns that the failure to recognize the roles, differences and inequities between men and women poses a serious threat to the effectiveness of the agricultural development (World Bank 2012). According to Midgley (2006), rural women's lives have been traditionally, culturally, and socially constructed as occupying social rather than economic spaces with their agency positioned within the private rather than public spheres. Women find themselves in the domestic realm where they are expected to nurture the family while the husbands leaves the domestic sphere to

the public sphere where they compete on the labour and business market and in politics (Mudege and Ezeh, 2009).

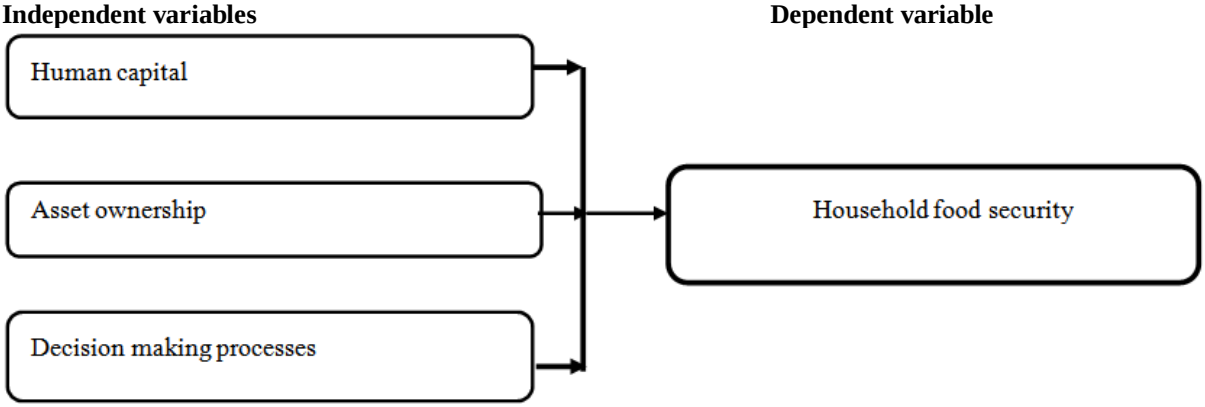
2.3.Gender disparity assessment and attainment of household food security

70% of the world's farmers are women, but most programmes that offer farmers credit and training target men (Hillary Clinton, US Secretary of State 2011). In spite of all evidence to the contrary, women are still often not explicitly recognized as farmers in most policy discussions. Indeed, many documents on agriculture mention 'farmers' and 'women' as if they were two entirely separate categories. This stems in part from the lack of acknowledgement of women's multiple roles in agriculture – how women 'grow food, sell food, buy food, prepare food (ActionAid, 2011). Gender inequalities and lack of attention to gender in agricultural development contribute to lower productivity, and higher levels of poverty as well as under-nutrition (World Bank, FAO and IFAD, 2009; FAO 2011). The 2012 World Development report dedicated to Gender Equality and Development warns that the failure to recognize the roles, differences and inequities between men and women poses a serious threat to the effectiveness of the agricultural development (World Bank, 2012).

2.4 Conceptual Framework

In this study, the independent variables were access to human capital, asset ownership and decision making processes by households while the dependent variable was enhancement of household food security.

Figure 2.1 Conceptual framework



Source: Author's own concept (2014)

2.4.1 Human capital

According to Ellis (1998), human capital comprises the skills, knowledge, labour and good health important to the ability to pursue different livelihood strategies. Investment in women's human capital is important, since women are both agents of and beneficiaries of development. Investment in their human capital, more than any other form of investment, increases women's capabilities, expands opportunities available to them, and empowers them to exercise their choices (Quisumbing and Meinzen-Dick, 2001).

Access to human capital, such as education and health, play a critical role in food security—as they are essential components of poverty reduction. While sustained income growth leads to poverty reduction and food security, the link between economic growth and food security may be weakened by the poor's limited access to human capital formation and basic infrastructure. Prioritizing development of human capital improves food security by providing much-needed education on health and nutrition, understanding the importance of food security itself, and enabling farmers to better adopt modern and more productive farming technologies—for example, by improving processing and storage (ADB, 2012).

Women also have less access to education, which is strongly linked to the productive capacity of households, and to financial services such as credit. These factors hamper their capacity to adopt new technologies, invest in equipment and inputs liked fertilizers and improved seeds, take advantage of extension services and participate in modern high value agricultural activities (SOFA, 2011). Building the human capital of women and girls through scaling up direct nutrition interventions, targeting educational efforts and building their vocational skills thereby broadening women's choices, and strengthening their influence within their households and communities would enhance food security at the household level (CFS, 2011). Agricultural extension services should be availed to all. In particular, women should benefit from access to agricultural extension services.

2.4.2 Asset ownership

In agriculture, productive assets are clearly critical for effective participation in market-led programmes. However, as a consequence of unequal gender relations – which arise from cultural norms perpetuated in "structure" – the assets that women control tend to have weak income generation potential and are rarely sufficient to serve as collateral for value chain investments (Farnworth et al, 2013). Women-owned assets often include small livestock, kitchen equipment, firewood, jewellery and savings. Women tend to invest in such assets because they can control them in most societies. Often women's assets also depend on the ability to access and maintain social capital, such as group-based micro-credit schemes. The assets controlled by men, by contrast, tend to be of higher value and contribute more directly to farm productivity, such as land, the ability to command and pay for labour, and farming technologies such as ploughs and sprayers. Women's access to productive resources like these is often mediated by male kin and may be withdrawn in the event of a marital breakdown or the husband's death. (Lawson-Lartego, 2009).

The gender gap in access to assets is largely dictated by social norms and extends to all dimensions of agriculture. Customary practices often restrict women's ability to own or operate land, the most important asset for households that depend on agriculture. Women hold between 10 and 20 percent of total land in developing countries, generally of a lesser quality than men's. They own fewer of the working animals needed in farming, like horses and cattle, and do not always have control over income from the typically small animals they manage, such as goats, sheep, pigs and poultry (SOFA, 2011).

2.4.3 Household decision making processes

This aspect of gender disparity focuses on five domains of empowerment, namely; women's role in making decisions about agricultural production, access to and decision-making power over productive resources, control over use of income, leadership in the community, and time use. This is meant to capture women's empowerment within their households and communities.

According to Doss (1999), the long-held assumption that households were cohesive units in Africa, with shared assets, needs and goals, does not always match reality. Rather, in many parts of sub-Saharan Africa, women and men often lead separate lives even within the same household, with access to different resources and different production and consumption activities. Farnworth et al (2013), note that this indigenous approach to livelihoods can be seen as complementary and may have served families fairly well in the past, but it has been fatally undermined by the fact that over many decades, both colonial and post-colonial governments have treated households as nuclear units, headed by men. Thus, development programmes have mostly targeted men as the household heads, disempowering women. Empowering women as decision-makers in all areas of their lives is challenging and exciting. It is a key to poverty reduction.

Transforming gender relations will help to make smallholder agriculture and associated development efforts more effective and efficient, with knock-on effects for a variety of development outcomes (Farnworth et al, 2013). Women farmers are often not as efficient as they should be because gender relations frequently do not allow them to be effective decision-makers. In many African countries, women and men farmers operate separate farm businesses, but men may decide how to spend some or all of the profits from the women's businesses. This reduces the ability of women to generate working and investment capital, so their businesses often stay small, making women unattractive value chain partners (Farnworth et al, 2013).

III. Methodology

3.1 Research Design

Descriptive research design was used in this study to demonstrate associations or relationships between the variables.

3.3 Target Population

The target population for this study was all the cash/food for assets beneficiaries in Kinango Sub County where the sample was obtained. The total target population was 60,000 persons. This translates to approximately 10,000 households from where the sample was obtained. The primary unit of analysis was the households, and the key informant was be the household head. Key informants from food security implementing agencies in Kinango Sub County were also interviewed. These were drawn from the Department of Agriculture and Livestock Production, Kenya Red Cross Society and World Food Programme

3.4 Sampling Frame

The sampling frame for the study was the cash/food for assets beneficiaries and in the four (4) divisions in Kinango Sub County (i.e. Kinango, Ndavaya, Kasemeni and Samburu). The list was be obtained from the Kenya Red Cross Society, Kinango PRRO office. Another category of respondents was agricultural extension

officers and other food security implementing agencies such as Kenya Red Cross Society and World Food Programme

3.5 Sample Size and Sampling Procedure

The plan of the study was therefore to sample 385 households which were selected by simple random sampling.

Table 3.1: Distribution of households under the cash/food for assets project in Kinango

Division	Location	Population under the Cash-for-Asset project (persons)	No. of households
Kinango	Puma	2,301	380
	Kinango	5,452	905
	Vigurungani	6,703	1,114
Ndavaya	Ndavaya	8,202	1,364
Kasemeni	Mwavumbo	1,687	278
	Kasemeni	3,795	629
	Gandini	1,674	275
	Mtaa	5,209	853
	Mwatate	4,329	718
Samburu	Macknon Road	3,976	660
	Taru	1,152	240
	Makamini	5,055	840
	Samburu South	3,858	643
	Chengoni	6,607	1,101
TOTAL		**60,000**	**10,000**

Source: Kenya Red Cross Society, Kinango PRRO Office, 2014

The study also utilized a non-probability sampling technique, in particular a purposive sampling method to identify the key informants from the food security implementing agencies in Kinango Sub County. Patton (1990) notes that purposive sampling is popular in qualitative research and subjects in this sampling technique are selected because of some characteristics. Purposive sampling also permits logical generalization and maximum application of information to other cases.

Table 3.2 Distribution of sample of food security implementing agencies

Type of sample	Number
Department of Agriculture	15
Department of Livestock Production	7
Kenya Red Cross Society (Kinango PRRO office)	14
World Food Programme (Mombasa)	2
Water Department	2
Total	**40**

(Source: Researcher, 2014)

The key informants from implementing partners in the sub county possess crucial information about the dynamics of tradition, customs, and gender issues within the sub county. A total of 5 respondents were purposely selected from the agencies that were implementing food security activities in Kinango Sub County. The total sample size for the study was therefore 390.

3.6 Data Collection

In this research, both primary and secondary data was collected from the cash/food-for-asset beneficiaries, project committee members and representatives of food security implementing agencies in the sub county by use of questionnaires and interview schedules.

3.7 Data Analysis and Presentation

The data analysis techniques that were used in the study include graphical displays of the data in which graphs summarized the data to facilitate comparisons, tabular description in which tables of numbers summarize the data. Qualitative data was analyzed through the use of SPSS where descriptive statistics was done. Content analysis of meanings as well as quotations from respondents was also used. Quantitative data was analyzed using descriptive statistics such as computing frequencies and ranking to check on the trends in preferences. Illustration using tables, graphs and pie charts was used. Interpretation was made on the analyzed data in relation to the literature review and the conceptual framework. Findings were interpreted and conclusions made together with recommendations.

3.8 Response rate of the respondents who participated in the study

In this study, questionnaire method was used to gather information and the numbers of questionnaires issued to households was 385 which was the household sample size. Out of the 385 contacted, a total of 382 questionnaires were completed, thus the response rate was 99.2%.

All the food security implementing agencies in Kinango Sub County who had been sampled participated in the study, giving a response rate of 100%. The high response rate was occasioned by proper timing of the interview period and project schedules of the beneficiaries. Proper sensitization also enhanced the participation of the beneficiaries in the study.

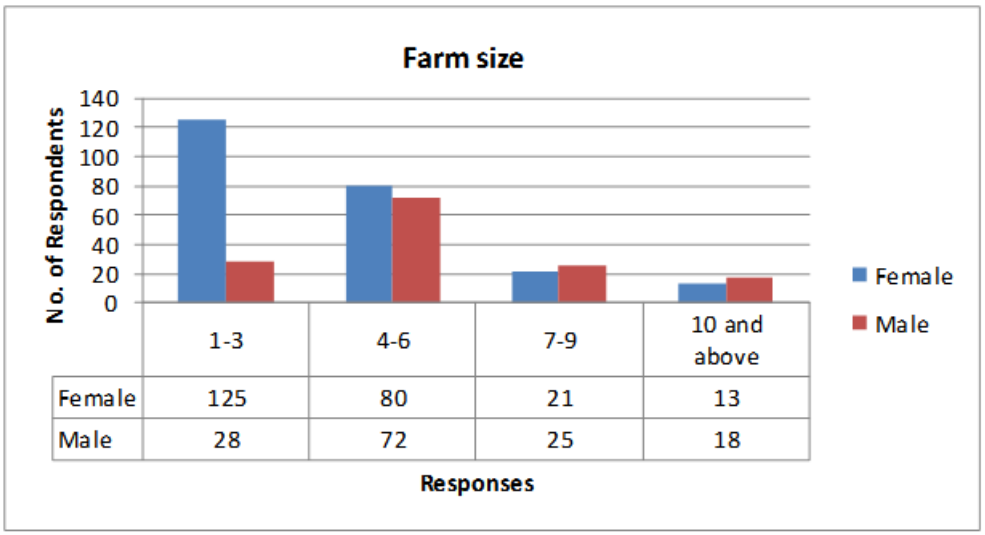
Descriptive analysis was used to analyze the data collected. This involved analysis of data to answer questions concerning the current status in the subject of study.

3.8.1 Asset ownership

This section presents the findings based on the first research question.

Research question 1: **To what extent does asset ownership have an effect on enhancement of household food security in Kinango Sub County?**

In agriculture, productive assets are clearly critical for effective participation in enhancement of food security at the household level. Physical assets comprise capital such as economic production processes, which includes land, farm implements, irrigation systems and livestock. Physical assets are very important in the attainment of livelihood activities and it is regarded as the engine of achieving household food security. The study looked at whether asset ownership has an effect on enhancement of household food security in Kinango Sub County.



	1-3	4-6	7-9	10 and above
Female	125	80	21	13
Male	28	72	25	18

Figure 4.1: Farm sizes (acres)

The study sought to find out from the respondents the size of farm holdings on which they practice farming. Study findings in Figure 4.5 above, indicate that in the smallest category of land size i.e. 1-3 acres, 125 (32.7%) of the respondents were females while 28 (7.3%) were males. In the medium category i.e. 7-9 acres, 21 (5.5%) were females while 25 (6.5%) were males. In the largest category i.e. 10 acres and above, only 13 (3.4%) were females while 18 (4.7%) were males. Land shortage is common among women. FAO (2008) observed that women farm smaller and more dispersed plots than men and are less likely to hold title, secure tenure, or the same rights to use, improve, or dispose of land. Women farmers, like the majority of farmers in developing countries, operate small farms (in India 70 per cent of all farms are one hectare or less in size and 80 per cent are under two hectares (World Bank, 2009). In addition to land, the study found out that the community uses different types of inputs which are a prerequisite for agricultural production. This is shown in Figure 4.6

The study sought to examine asset ownership by establishing from the respondents whether or not it was easy for them to access the various inputs they used in the last cropping season. The findings are shown in Figure 4.2 below.

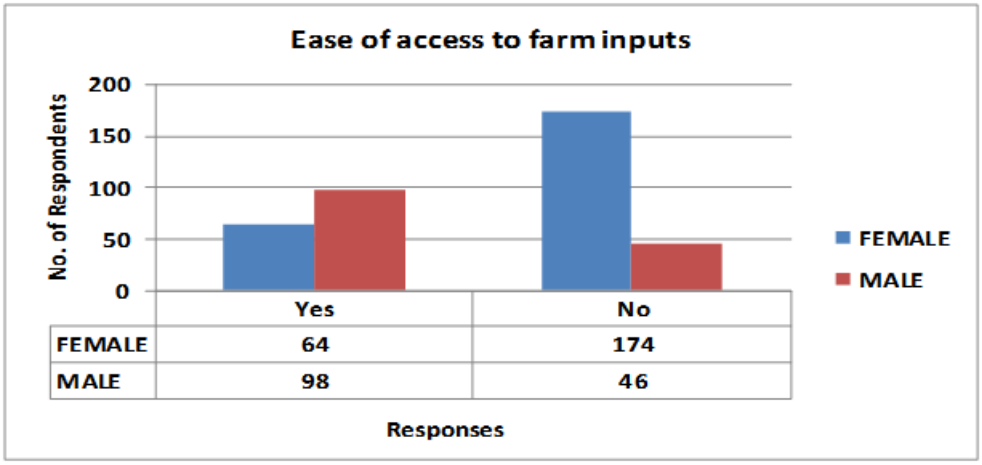


Figure 4.2: Ease of access to farm inputs by respondents

The study revealed that it was comparatively difficult for women farmers in Kinango Sub County to access inputs which are important assets for agricultural production. Figure 4.2 shows that 64 (16.8%) female farmers responded that it was easy for them to access farm inputs compared to 98 (25.6%) male farmers. A majority of female farmers i.e. 174 (45.5%) noted that it was difficult for them to access farm pre-requisites compared to 46 (12%) male farmers. Again, most of the female farmers who gave positive responses acquired free inputs from the county government under the Kwale county food security initiative while most of their male counterparts were able to purchase the inputs from agrovets in the sub county.

The findings clearly indicate an unfair access to productive assets as another major indicator of gender disparity at both a community and a household level in Kinango Sub County. In this regard, the level of gender disparity is reflected in the allocation and access of productive assets. Physical productive assets are essential in household food security enhancement. It is in this regard that table 4.1 presents the accessibility of physical assets among men and women in the households of Kinango Sub County as indicated by respondents in the study.

Table 4.1: Access to physical assets for agricultural production

Response	Frequency	Percent	Cumulative Percent
Strongly agree	29	7.6	7.6
Agree	36	9.4	17.0
Neither agree or disagree	14	3.7	20.7
Disagree	188	49.2	69.9
Strongly disagree	115	30.1	100.0
Total	382	100.0	

The study findings in Kinango Sub County revealed that men and women do not have equal access to physical productive assets. Statistics in Table 4.4 show that 49.2% of the respondents disagree that men and women have equal access to physical assets while 30.1% strongly disagree. A paltry 7.6% strongly agree that men and women have equal access to physical assets. This is the case mainly because men are the ones who take the responsibilities of allocating and distributing assets at the community and household levels. Additionally men have more economic ability to access productive assets. The disparity in access to physical productive assets among men and women in the sub county affects household food security. The study findings concur with FAO (2011) report which argues that if women had the same access to productive resources as men, they could increase farm yields by 20–30%. Studies by Jones (1983) also corroborate these findings and note that agricultural production and productivity levels increase where there is more equity in asset access.

3.8.2 Human capital

Human capital comprises the skills, knowledge, labour and good health important to the ability to pursue different livelihood strategies. This section presents results on access to human capital by households for enhancement of household food security based on the second research question.

Research question 2**: To what extent does human capital have an effect on enhancement of household food security in Kinango Sub County?**

Due to the centrality of agricultural information, skills and knowledge for the enhancement of food security, the study sought to find out the sources of the above from the respondents

The study sought to find out whether men and women have equal access to human capital/assets. The findings are illustrated in table 4.12

Table 4.2: Respondents views on whether men and women have equal access to human capital/assets

Response	Frequency	Percent	Cumulative Percent
Strongly agree	83	21.7	21.7
Agree	43	11.3	33.0
Neither agree or disagree	27	7.1	40.1
Disagree	151	39.5	79.6
Strongly disagree	78	20.4	100.0
Total	382	100.0	

Table 4.2 shows the level of access to human assets among men and women in Kinango sub county. Findings show that a majority of the respondents (39.5%) disagree that men and women have equal access to human capital/assets, 20.4% strongly disagree, 11.39% agree while 7.1% neither agree nor disagree. According to ADB (2012), access to human capital, such as education and health, play a critical role in food security—as they are essential components of poverty reduction. Extension provision in the agricultural sector has been more often biased against rural women farmers as they often lack access and control over productive resources and technologies that are affordable and appropriate to their needs. These findings show that men and women in Kinango Sub County do not have equal access to human assets for agricultural production, thereby indicating a bias. In this regard, views were sought whether deliberate targeting of women farmers for agricultural extension services would increase agricultural production in the sub county. The findings are shown in table 4.3 below.

Table 4.3: Respondents views on whether when women are targeted for agricultural extension services, agricultural productivity increases

Response	Frequency	Percent	Cumulative Percent
Strongly agree	143	37.4	37.4
Agree	196	51.3	88.7
Neither agree or disagree	15	3.9	92.6
Disagree	14	3.7	96.3
Strongly disagree	14	3.7	100.0
Total	382	100.0	

According to Table 4.3, approximately 51.3% of the respondents agree that when women are targeted for agricultural extension, agricultural productivity increases, 37.4% strongly agree while only 3.7% strongly disagree. These findings agree with Blumberg (1992) and Blacken and Canagarajah (2003) whose studies have demonstrated that where women are targeted for extension services they produce higher yields. To ensure that women are adequately targeted to enhance food security, there should be reforms in the existing extension systems and an array of innovative practices developed to continuously empower rural populations, with an attempt in ensuring that women and disadvantaged groups can fully benefit from rural extension delivery systems. In this regard, the researcher sought to find out the household's responses on whether women in Kinango Sub County have less contact with extension services than men. Study findings are shown in Table 4.4

Table 4.4: Respondents views on whether women have less contact with extension services than men.

Response	Frequency	Percent	Cumulative Percent
Strongly agree	114	29.8	29.8
Agree	137	35.9	65.7
Neither agree or disagree	53	13.9	79.6
Disagree	62	16.2	95.8
Strongly disagree	16	4.2	100.0
Total	382	100.0	

Table 4.4 indicates responses on whether women in Kinango sub county have less contact with extension services than men. The study findings indicate that 35.9% of the respondents agreed that women in the sub county have less contact with extension services than men while 29.8% strongly agreed. This agrees with World Bank (2008) which argues that women farmers have less contact with extension services than men, especially where male-female contact is culturally restricted. The general assumption here is that extension messages will be relayed to women if and when necessary. Where it is transferred, the knowledge is passed inefficiently from husband to wife. Community agricultural education and training is very important for enhancement of household food security. The Ministry of Agriculture normally conducts farmer's training sessions to impart relevant skills for agricultural production

3.9 Household decision making processes

Empowering women as decision-makers in all areas of their lives is challenging and exciting. It is a key to poverty reduction (Farnworth et al, 2013). The study sought to explore the gender concerns in household decision making processes with regard to agricultural production and household food security enhancement. This section presents data based on the third research question.

Research question 3: **To what extent do household decision making processes have an effect on enhancement of household food security in Kinango Sub County?**

The study findings are presented below.

Household decision-making affects many choices with important consequences including the distribution of income, allocation of resources, the allocation of time, purchase of goods, and fertility decisions. If there is gender inequality in household decision making then this affects the economic well being of women and children in the household. The study sought to find out from respondents who in the household was responsible for decision making with regard to timing of land preparation for agricultural production in a particular cropping season. The findings are illustrated in Figure 4.3

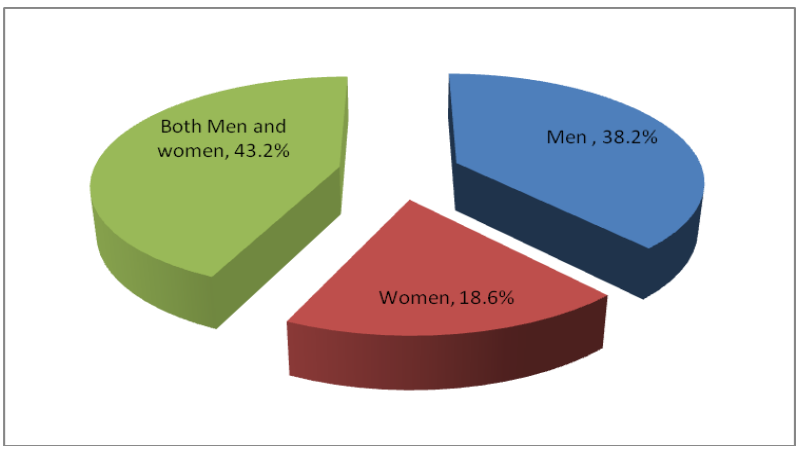


Figure 4.3: Responsibility for decision making with regard to timing of land preparation

Study findings in Figure 4.3 above show that 43.2% of the respondents noted that both men and women are responsible for decision making with regard to timing of land preparation for agricultural production in a particular cropping season, 38.2% responded that it was men while 18.6% said women were solely responsible. The findings indicate that both men and women are responsible. However, although this was the case, men are still the dominant force in terms of decision making in this regard and the women have to consult their men before making any decision about anything.

The study also revealed that traditional gender roles, allowed few rights to women in the sub county. For instance at the start of a cropping season, men are the ones to initiate land preparation. This therefore means that when the husband is away the wife has to wait until he comes back to initiate actual preparation of land. This at times delays the whole process of land preparation thereby affecting the rest of the production process.

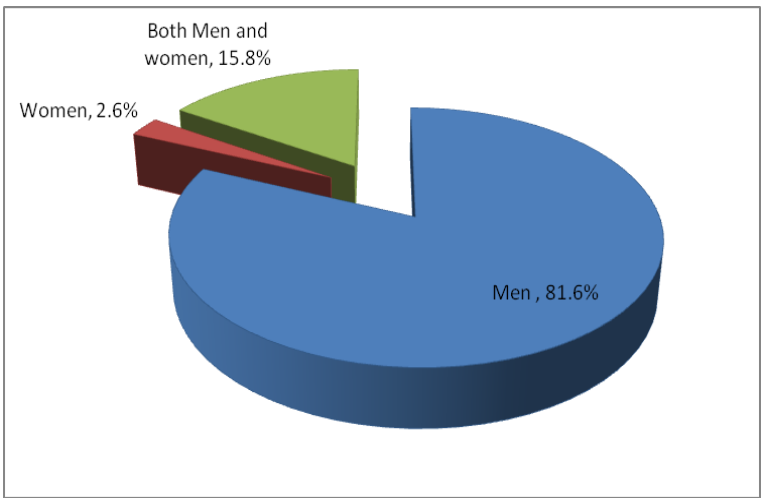


Figure 4.4: Responsibility for decision making with regard to allocation and distribution of productive assets.

Figure 4.4 illustrates that men in Kinango Sub County are generally responsible for decision making with regard to allocation of productive resources as noted by 81.6% of the respondents. The study also revealed that comparative resources of the wife and husband are more important determinants in decision-making and power than social norms. Mackinnon and Magarey (1993) agree with this and note that the spouse with the greater resource base is more likely to have more decision making power. The study sought to find out who in the household is responsible for decision making with regard to sale of agricultural produce. The findings are shown in Figure 4.5

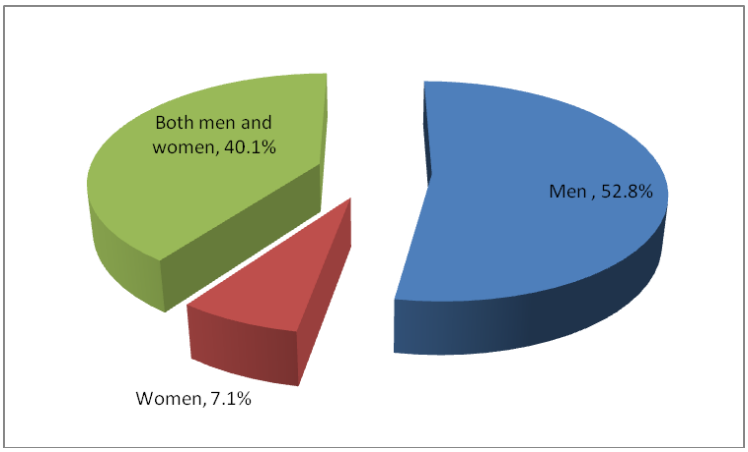


Figure 4.5: Responsibility for decision making with regard to sale of agricultural produce

Study findings in Figure 4.5 show that men in the sub county are responsible for decision making with regard to sale of agricultural produce as indicated by 52.8% of the respondents. Although women are in many cases the producers at the household level, the men make decision and when to sell the produce in addition to the quantities that should be offered for sale in the local markets. This disenfranchises the women. This agrees with ILO (2000) which argues that although women's farm work in Syria usually includes planting, seeding,

weeding, harvesting, fruit collection, crop residue collection and pruning, animal feeding, milking, and egg collection, women have little role in marketing and sale of the products. Credit is important for agricultural production. The study sought to find out from respondents who are responsible for decision for decision making with regard to use of income from sale of agricultural produce, livestock and livestock products. Findings are shown in Table 4.6 below.

Table 4.5 : Responsibility for decision making with regard to use of income from sale of agricultural produce, livestock and livestock products

Gender	Frequency	Percent	Cumulative Percent
Men	235	61.5	61.5
Women	10	2.6	64.1
Both men and women	137	35.9	100.0
Total	382	100.0	

Study findings in Table 4.5 show that 61.5% of the respondents noted that men in Kinango Sub County are responsible for decision making with regard to use of income from sale of agricultural produce, livestock and livestock products, 35.9% said both men and women are responsible while only 2.6% responded that women are responsible. This clearly shows a gender disparity in this regard. These findings agree with Farnworth et al (2013) who argue that in many African countries, women and men farmers operate separate farm businesses, but men may decide how to spend some or all of the profits from the women's businesses. This reduces the ability of women to generate working and investment capital, so their businesses often stay small, making women unattractive value chain partners. Male control of marketing further reinforces women's lack of control over income.

4.5. Analysis of data from key informants

Data was collected from 5 key informants in the county about issues around the effects of gender disparity on enhancement of household food security in Kinango Sub County, Kwale County. These were mainly food security implementing agencies in the sub county. They were interviewed using a structured questionnaire and below is the summary of their responses.

There should be frequent interaction between agricultural extension providers and women farmers. However findings from the study show that interaction between food security implementing agencies in Kinango sub county and women beneficiaries of the cash/food-for-asset project is not as frequent as required. This is shown in Table 4.6

Table 4.6: Frequency of interaction between food security implementing agencies and women beneficiaries of the cash/food-for-asset project in Kinango sub county.

Response	Frequency	Percent	Cumulative Percent
Once or twice a week	1	20	20
More than twice a week	1	20	40
Once or twice a month	1	20	60
Once or twice a quarter	2	40	100
Total	5	100	

According to the statistics in Table 4.6 most food security implementing agencies (40%) indicated that they interact with women beneficiaries of the cash/food-for-asset beneficiaries only once or twice in a quarter. The others have interactive sessions with the women beneficiaries, more than twice a week (20%), once or twice a month (20%) and once or twice a week (20%). The study revealed that there are still significant challenges in providing adequate extension and advisory services to women farmers in the sub county. These findings agree with studies in India, Ghana and Ethiopia by IFPRI–World Bank (2010) which revealed important gender gaps

in access to agricultural extension in these regions due mainly to the limited participation of female farmers in extension-related meetings and the lack of incentives for reaching these female farmers.
Information was sought from the key informants in the sub county on the frequency of passing gender specific agricultural extension messages to the project beneficiaries. The study findings are indicated in Table 4.7 below.

Table 4.7: Frequency with which food security implementing agencies in Kinango Sub County pass gender specific messages with regard to agricultural development

Response	Frequency	Percent	Cumulative Percent
Sometimes	0	0	0
Often	0	0	0
Very often	0	0	0
Never	5	100	100
Not sure	0	0	
Total	5	100	

From the study findings in Table 4.7, food security implementing agencies in the sub county never have sessions with women farmers where they pass gender specific agricultural information to them. The delivery of extension and advisory services is essential to ensure that rural population groups, particularly women farmers are equally recognized as key stakeholders, having their needs met and socio-economic concerns properly addressed. This calls for a gender-sensitive approach to agricultural extension and advisory services that contributes to the goal of promoting gender equality as a component of food security enhancement in rural settings.

Finally the agencies were asked to rate how important they thought the effects of gender disparity under study were with regard to enhancement of household food security in the sub county, with 1 being extremely important and 3 being extremely unimportant. The finding are illustrated in Figure 4.6

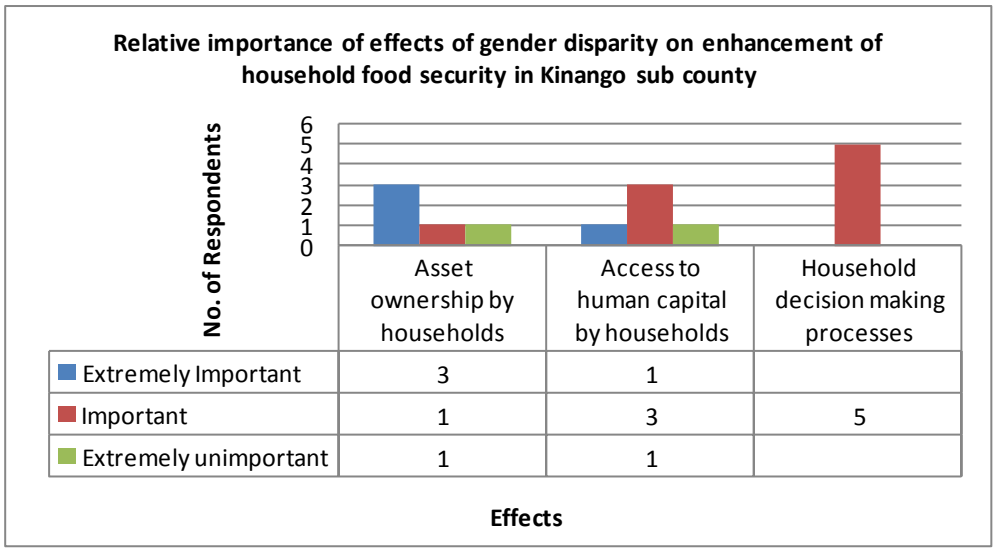


Figure 4.6: Relative importance of effects of gender disparity on enhancement of household food security in Kinango Sub County

The findings in Figure 4.6 reveal that on asset ownership, 3 respondents (60%) out of the 5 interviewed noted that asset ownership by households in the sub county is extremely important and therefore has a significant impact on enhancement of household food security. The respondents further noted that when there is disparity across gender with regard to asset ownership then household food security is negatively affected and therefore efforts should be made to ensure equal access and ownership of assets.

The findings agree with Quisumbing et al (1995) who observed that women's ability to fulfill their roles as food producers can be enhanced by improving woman's access to resources and technology. Again on access to human capital 60% of the respondents (3 out of 5) noted that this effect of gender disparity is important with regard to enhancement of household food security in the sub county. The study revealed that all food security implementing agencies observed that household decision making processes is important and therefore has a significant impact on enhancement of household food security in the sub county.

IV. Conclusions

Based on the results obtained from the study in Kinango Sub County, the researcher was able to draw the following conclusions;

i. Control over and ownership of assets is a critical component for the well-being of individuals and households. Women's access to, use of and control over land and other productive resources are essential to ensuring their right to equality and to an adequate standard of living that will invariably enhance food security at the household level. Increasing women's control over assets, mainly land, physical, and financial assets, has been shown by this study and studies by other researchers to have positive effects on a number of important development outcomes for the household, including food security, as well as women's own well-being. Efforts have put a greater emphasis on implementing food security projects but without understanding the practical and cultural obstacles that prevent women from accessing the most needed productive assets.
ii. Majority of women farmers in Kinango Sub County operate small farms. Additionally, land and other productive assets owned by female farmers tend to be of lesser quality and value. This considerably limits women farmers ability to invest in their land and improve their productivity and increases their exposure to household food insecurity
iii. Women farmers in Kinango Sub County have less contact with extension services than men. While the need for a gender-sensitive approach to extension and advisory service delivery is increasingly recognized, the challenge of how women farmers' access and benefit from agricultural advisory services that will enable them to enhance food security at the household level still remains.
iv. Extension workers in the sub county have less awareness of the needs of women farmers. Women farmers should equally be recognized as key stakeholders in enhancement of household food security and their needs met and socio-economic concerns properly addressed.
v. Interaction between food security implementing agencies and female farmers is not adequate to translate to meaningful agricultural production and household food security. Furthermore, the agencies do not have gender specific agricultural messages if and when they interact with women farmers.
vi. Majority of community groups still hold onto the traditional misconception that women cannot make decisions. Women are under-represented in property ownership, education, political leadership and in most decision making organs. This situation is the outcome of the interplay of a myriad of factors ranging from discriminatory property ownership laws and practices to deep-seated cultural biases that consign the female gender to subordinate status in the local communities. As it stands, this situation features underutilization and miss-utilization of productive potential; it hinders the full realization of women's human capacities and compromises their efforts to enhance household food security.
vii. Food security implementing agencies in the sub county do not adequately have interactions with women farmers in their effort to deliver agricultural extension and advisory services. And even when they meet with female farmers, they seem not to have gender specific agricultural messages that will put such women farmers at better position to increase agricultural productivity and enhance household food security.

V. Recommendations

From the study findings and conclusions the following recommendations were made:

i. In view of poor female farmer's access to, and control of productive resources, there should be policy interventions at the national and county levels designed to increase female farmer's access to assets. Improving women's access to, use of and control over land and productive resources is essential for ensuring women's equality. This effort is also key to tackling poor agricultural production among women farmers, improving household food security and sustainable development and therefore will have beneficial impacts for all equality. The need to address equity in access to and control over productive resources across genders is therefore imperative.
ii. The national and county governments should facilitate and support land reforms and joint titling programmes. Gender equity in land rights need to be instituted and upheld consistently across the entire legal framework, from the constitution to family laws and supported by legal trainings enabling women to understand and claim their rights.

iii. The County Government through the Ministry of Agriculture, Livestock and Fisheries should collaborate with other food security implementing partners to ensure adequate provision of agricultural extension and advisory services to women smallholder farmers. The agencies should support rural women and girls to better access human capital and training.
iv. The implementing partners should come up with strategies of reducing gender disparities in agriculture and food security enhancement by encouraging male farmers to consider female farmers in all spheres of decision making. The agencies should support rural women's greater voice in decision making especially at the household level.
v. Encourage the facilitation and sharing of agricultural information and knowledge among women farmers to enable them increase productivity and enhance food security at the household level.

Suggestions for further research

The study suggests the following areas for further research:

i. A study should be conducted on the strategies being employed by the County governments and food security implementing partners to address practical and specific gender needs, and the culture and context of gender roles.
ii. A study should be carried out on the contributions of private extension providers to education and training of women farmers in Kwale county

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