FARMER'S CAPACITY BUILDING PRACTICES ON SUSTAINABLE FOOD SECURITY AMONG HOUSEHOLDS IN MIGORI COUNTY; KENYA

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The Strategic JOURNAL of Business & Change MANAGEMENT
ISSN: 2312-9492 www.strategicjournals.com
Vol. 9, Iss. 1, pp 646 – 660. March 10, 2022. www.strategicjournals.com, ©Strategic Journals

FARMER'S CAPACITY BUILDING PRACTICES ON SUSTAINABLE FOOD SECURITY AMONG HOUSEHOLDS IN MIGORI COUNTY; KENYA

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Accepted: March 4, 2022

ABSTRACT

On the global scene, Sustainable Food Security has been a threat to both developed and developing economies. There have been families suffering because of less food available or none at all resulting from various factors that cause food insecurity to be a challenge to many economies especially the areas of sub-Saharan Africa and other developing economies in South America, for example Brazil. Austerity measures have been put in place by many international and local organizations but still hunger persists affecting the life and productivity of concerned citizens. Hence, the objective of the study was to determine the contribution of Farmer Training Practices on Sustainable Food Security in Households in Migori County; Kenya. This study applied Correlation research design. Fisher's model was applied to arrive at the sample size. The Structured questionnaire was applied on collection of primary data from Households of Migori County; Kenya. Pilot study was done on Rarieda Sub County, Siaya County; Kenya, hence enabled for testing of the reliability and validity of the research instrument. The study descriptive and inferential statistics was analyzed by use of SPSS version 24 software and conclusion was; Farmer Training Practice had an influence on Sustainability of Food Security. The study recommended for the Counties to embrace the use of Farmer Training Practices with the reason, such practices improves Sustainable Food Security. The study recommended for further studies in other various counties using different methods of analysis and variables.

Key words: *Farmer Capacity Building, Farmer Training Practices, Sustainable Food Security*

CITATION: Ojungo, A. K., Kadima, M. J., & Malenya, A. (2022). Farmer's capacity building practices on sustainable food security among households in Migori County; Kenya. *The Strategic Journal of Business & Change Management,* 9 (1), 646 – 660.

INTRODUCTION

Sustainable Food Security is a measure of having consistent access to safe, adequate and nutritious food for an active and healthy life; hence, for a household to be considered food secure, members must be able to acquire this food without resorting to emergency food programs, scavenging, stealing and other coping strategies (Barrett & Constas, 2014). If a household does not meet these conditions for any part of the year, or if these conditions are uncertain, it is considered food insecure, for example, food insecure households include those that are unable to afford balanced meals, worried their food will run out before they have money to buy more, forced to skip meals because they can't afford enough food, and in more severe cases hungry because they can't afford enough food (Alshehri, Rezgui & Li, 2015). According to Brink and Visser (2015), Sustainable Food security, at the individual, household, national, regional and global levels is achieved when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.

The problem of the food supply is linked to many issues, but looking at the way things are currently in the world, agriculture and people's food consumption patterns must be improved. Improvement of rural areas can result in more food being produced to feed people (UN, 2013). Climate change is creating more risks and leaving many people hungry. In 2013, the United Nations (UN) advised that thoughtful modification of the worldwide food and farming system is necessary if we are to feed the current 925 million people and the additional two billion people estimated by the year 2050. The UN Sustainable Development Goals SDGs are many. However, this study looked at three of them which are the second, sixth, and the seventeenth on the extent of their attainment. The second goal of the SDGs is Zero hunger meaning to end hunger, achieve food security, improved nutrition and promote sustainable agriculture. If everyone cooperates it can be achieved by the year 2030. Among many approaches advocated on is to use irrigation (UNDP, 2015). Access to clean water and improving sanitation form the sixth SDG, Water insufficiency affects more than 40% of people globally, thus, a need to protect water sources (UNDP, 2015). Moreover, this is the same water needed for irrigation.

Revived global partnership for sustainable development is the seventeenth SDG goal; hence, there is a need to work together and involve all affected to end climate change. The SDGs are big challenges. UNDP (2015) aired a view that all nations need to work together as it is the case for stakeholders in irrigation projects to achieve their goals. The frequent food insecurity and emergency food requirements noted in the horn of Africa is a glaring reminder that inadequate attention has been given to mitigating the real causes of susceptibility in the arid and semi-arid lands (ASALs) of the African region. One such ASAL is Kitui County in Kenya. The problem of the food supply is linked to many issues, but looking at the way things are currently in the world, agriculture and people's food consumption patterns must be improved. Improvement of rural areas can result in more food being produced to feed people (UN, 2013).

A number of global agreements like the World Food Summit and Millennium Summit have set goals and specific targets for collective action in reducing the incidence of hunger and food insecurity (Manning, 2021). Collectively, food insecurity reduces global economic efficiency by 2% –3% yearly (USD 1.4–2.1 trillion), with individual nation costs projected at 10% of GDP (Harrigan, 2014). Global food security is likely to remain a problem worldwide for the next 50 years and beyond if the world cannot formulate methods to control the situation. While agro-ecological approaches give some promise for yield improvement, increases in investment and policy reforms could significantly improve on sustaining food security globally if well implemented (Manning, 2021).

According to Adams (2021), the global challenge to Sustainable Food Security is straight forward in that the world must feed 9 billion people by 2050. USAID (2019) further establishes that food UN has suggested 17 goals to end hunger, achieve food security and improve nutrition, and promoted sustainable agriculture for the year 2030. The world produces enough food to feed everyone with at least 2,720 kilo calories per day, which is well above Food and Agriculture Organization of the United Nation's (FAO's) recommended minimum of 2250 kilocalories per day (Sunderland, 2011). Ironically, food insecurity remains globally widespread and stubbornly high (FAO, 2006). Silva (2015) asserted, United Nations has been pushed by a need to improve human wellbeing as first SDG and the second SDG is Zero hunger to all, achieve food security, improved nutrition and promote sustainable agriculture. So far globally in the past 20 years, hunger has fallen by almost half. Many countries are better at feeding their people. An extra mile to finish hunger and malnutrition for all is best. It's not a mean task but it better to help nearly one in every nine people on earth who go to bed hungry every night. If all nations work well it can be achieved by the year 2030 (UNDP, 2015). The sixth SDG is clean water and sanitation. Water insufficiency affects more than 40% of people globally; moreover, it is still growing due to climate change. If no action is taken by the year 2050 at least one in every four people globally will face recurrent water deficiencies. Protecting wetlands and better water-treatment methods are needed for achieving this goal (UNDP, 2015). SDG goal 17 is a global partnership for sustainable development. About 193 nations have accepted to work together to attain all the other SDGs because they are big challenges (UNDP, 2015). The Food and Agriculture Organization (FAO), a world food body advises that without speedy steps in reducing and eradicating hunger and malnutrition by the year 2030, then the SDGs will not be realized. The fight to end hunger and poverty ought to be fought in rural areas, which is where about 80% of the world's starving and unfortunate people live. Focused political will invest in the key agents, namely smallholders, indigenous communities, rural women, farmers, and youth is key.

Africa has been struggling in one form or another with food insecurity for almost half a century due to a number of factors including distribution obstacles, global climate change, lack of successful local agriculture and inability or disinterest to act by local officials (Warr, 2015). According to Jacobs, (2015), although most people would concur that each of these factors carries at least some logic, there is far less international accord on the best solution to the crisis. Ever since food aid to Africa began in the late 1950s, the predicament has been characterized as a supply affair. Inadequacy of successful and widespread agriculture in SSA led to the inability of local governments to provide enough food for their populations. In response, Western governments and aid organizations have sought to provide foreign food aid to SSA, in the form of imported crops from prestigious and advanced countries globally.

In a programme in Cabo Delgado and Nampula in Mozambique to help promote inclusive economic growth for local communities by capacity building of local institutions through training, it was recommended that the programme be inclusive so that women can participate and fully benefit from opportunities available in the sector (Wong, 2019). Farm households in developing countries often face a wide range of recurring and unanticipated environmental, ecological, or socio-economic shocks; more so, the welfare costs of such shocks are often significant and draw policy and humanitarian attention (Ambelu, Donkoh & Ansah, 2017).

According to Dado (2020) latest figures in Africa show that 73 million people suffer from acute food insecurity; hence, from 2016 to 2018, Africa imported around 85% of its food from outside the continent, making an annual food bill of $35 billion, which is projected to hit $110 billion by 2025. This heavy dependence on world markets is hazardous for food security, particularly in times of prolonged

The Strategic Journal of Business & Change Management. **ISSN** 2312-9492 (Online) 2414-8970 (Print). www.strategicjournals.com

crisis. World Bank (2019) embrace, African regions, especially the Sahel and southern Africa, have been harshly affected by climate change and drought all along, more so, the unprecedented locust outbreak in the Horn of Africa always puts an additional pressure on regional food systems. Pais, Jayaram and Wamelan (2020) assert the conflict hampers people's access to food as farmers abandon their farms and do not bring their products to markets to avoid risking their lives, hence, given the prevalence of conflict and political instability, the region is at great risk of food insecurity.

The goal of food self-sufficiency was largely attained in the early years of independence until the late seventies after which massive food shortages set in; hence, since then the goal of food self-sufficiency and food security has been a dream with the main challenges of access, availability and affordability taking a center stage among the poor (Chege, Lemba, Semenye, & Muindi, 2016).

Kivisi (2019) assert, Households are also incurring huge food bills due to the high food prices. Maize being staple food due to the food preferences is in short supply and most households have limited choices of other food stuffs. The current food insecurity problems are attributed to several factors such as; frequent droughts in most parts of the country; high cost of domestic food production due to high costs of inputs especially fertilizer; displacement of a large number of farmers in the high potential agricultural areas following the post-election violence which occurred in early 2008; high global food prices and low purchasing power for large proportion of the population due to high level of poverty.

According to Odhiambo, Hendrick and Mutsvangwa-Sammie (2021), while action research combines research and development to better understand problems and thereby find better solutions; hence, involves dealing with different interests, looking for synergies and tradeoffs, and reflecting on progress with partners, more so, another, less known tool based on this logic is problem‐driven iterative adaptation (PDIA), which provides a systematic way of working towards uncertain outcomes through feedback mechanisms designed to facilitate effective reform processes (world Bank,2019).

Statement of the problem

Kenya has about 80 per cent of its population residing in rural areas where agriculture is dominant. Out of these, over 60 per cent are women engaged in small and medium holder farming. Despite the fact that Kenya has been implementing a number of food security projects, over 10 million Kenyans still suffer from chronic food insecurity and between two and four million people require emergency food assistance at any given time (Kivisi, 2019).According to the 2015 Millennium Development Goals report, about 795 million people worldwide are undernourished. This is amplified by the incessantly rising world population and the impacts of climate change (UN, 2015). Migori County Integrated Development Plan 2013/2017 indicated that the county produces food that can last only for nine months in a year. The output is nonetheless not stable and thus food gaps go up to eight months in poor seasons. The three to four months food difference is sourced from the neighboring counties and even Uganda. Despite several capacity building practices.

Gigia (2018) asserts farmer field schools in particular, which may be one component of broader agricultural extension services and training; use a more 24 bottom-up approach to training and knowledge transfer. Farmer field schools are participatory, empowering and experiential in nature, focusing on problems and priorities identified by the farmers, rather than on issues and challenges determined. According to Adams (2021), annual agricultural production will need to rise by an estimated 75% from 2015 levels in order to meet consumption in 2030 which is an assumption with no practical implication; hence, the arising of this study to examine and find out the effect of Farmer Training Practices on Sustainable Food security in Households in Migori County; Kenya.

Objective of the Study

To determine the contribution of Farmer Training Practices on Sustainable Food Security in Households in Migori County; Kenya

Research Hypothesis

H_{01}: Farmer Training Practices do not significantly contribute to Sustainable Food Security in Households in Migori County, Kenya.

LITERATURE REVIEW

Theoretical review

Constructivism Theory; Constructivism is 'an approach to learning that holds that people actively construct or make their own knowledge and that reality is determined by the experiences of the learner' (Elliott et al., 2000). In elaborating constructivists' ideas Arends (1998) states that constructivism believes in personal construction of meaning by the learner through experience, and that meaning is influenced by the interaction of prior knowledge and new events. The principles of constructivism embrace that knowledge is constructed, rather than innate or passively absorbed. Constructivism's central idea is that human learning is constructed, that learners build new knowledge upon the foundation of previous learning. The prior knowledge influences what new or modified knowledge an individual will construct from new learning experiences (Phillips, 1995).

The second notion is that learning is an active rather than a passive process; the passive view of teaching views the learner as 'an empty vessel' to be filled with knowledge, whereas constructivism states that learners construct meaning only through active engagement with the world (such as experiments or real-world problem solving).

Information may be passively received, but understanding cannot be, for it must come from making meaningful connections between prior knowledge, new knowledge, and the processes involved in learning.There is a believe that all knowledge is socially constructed; hence, Learning is a social activity and is something we do together, in interaction with each other, rather than an abstract concept (Dewey, 1938). For example, Vygotsky (1978), believed that community plays a central role in the process of "making meaning." For Vygotsky, the environment in which children grow up will influence how they think and what they think about. Thus, all teaching and learning is a matter of sharing and negotiating socially constituted knowledge. For example, Vygotsky (1978) states cognitive development stems from social interactions from guided learning within the zone of proximal development as children and their partner's co-construct knowledge.

The theory as well stick on the believe that all knowledge is personal; each individual learner has a distinctive point of view, based on existing knowledge and values; hence, it means that same lesson, teaching or activity may result in different learning by each pupil, as their subjective interpretations differ, however, this principle appears to contradict the view the knowledge is socially constructed. Fox (2001) argues; that although individuals have their own personal history of learning, nevertheless they can share in common knowledge, that although education is a social process, powerfully influenced by cultural factors, nevertheless cultures are made up of sub-cultures, even to the point of being composed of sub-cultures of one. Cultures and their knowledge-base are constantly in a process of change and the knowledge stored by individuals is not a rigid copy of some socially constructed template. In learning a culture, each child changes that culture.

Constructive theory puts into consideration that Learning exists in the mind; the constructivist theory posits that knowledge can only exist within the human mind, and that it does not have to match any real world reality (Driscoll, 2000).Learners will be constantly trying to develop their own individual mental model of the real world from their perceptions of that world. As they perceive each new experience, learners will continually update their own mental models to

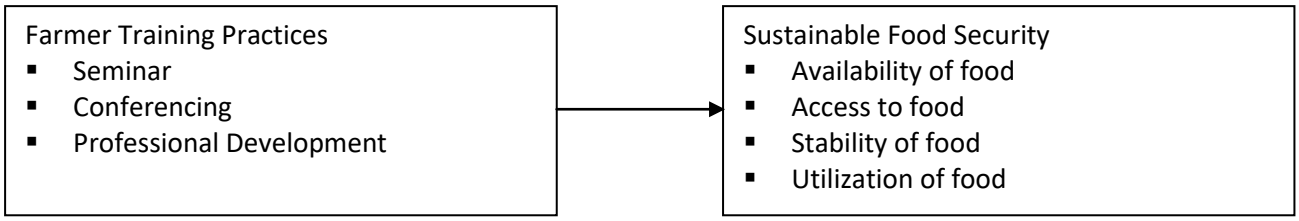
The Strategic Journal of Business & Change Management. **ISSN** 2312-9492 (Online) 2414-8970 (Print). www.strategicjournals.com

reflect the new information, and will, therefore, construct their own interpretation of reality.

There are three main types of constructivism**;** Cognitive constructivism based on the work of Jean Piaget, social constructivism based on the work of Lev Vygotsky and radical constructivism. Cognitive constructivism states knowledge is something that is actively constructed by learners based on their existing cognitive structures. Therefore, learning is relative to their stage of cognitive development, Cognitivist teaching methods aim to assist students in assimilating new information to existing knowledge, and enabling them to make the appropriate modifications to their existing intellectual framework to accommodate that information.

Conceptual Framework

This is a diagram illustrating the linear relationship between independent variable, Farmer Training Practices and the dependent variable, Sustainable Food Security as shown in figure 1.



Independent Variables **Dependent Variable**

Figure 1: Conceptual Framework

Review of study variables:

Farmer Training Practices and Sustainable Food Security

Agricultural training practice is any type of programme that aims at facilitating transfer of knowledge or skills on topics that are of agricultural benefit to farmers. Training practices for farmers vary considerably. Some practices focus directly on teaching farmers new skills using top-down 'training and visit' methods. Governments often package such practices as extension services, a broad term for programmes which aim to 'support and facilitate people engaged in agricultural production to solve problems and to obtain information, skills and technologies' (Kivisi, 2019). Although traditionally considered a top-down approach to training and extension services have over time become more participatory in nature (Waddington *et al*., 2014).

Gigia (2018) asserts farmer field schools in particular, which may be one component of broader agricultural extension services; use a more 24 bottom-up approach to training and knowledge transfer. Farmer field schools are participatory, empowering and experiential in nature, focusing on problems and priorities identified by the farmers, rather than on issues and challenges determined. According to FAO (2013), the World Summit declaration on Food Security food security exists when all people, at all times, have physical and economic access to sufficient, safe, nutritious food to meet their dietary needs and food preferences for an active life .

Food security is the availability of food and one's access to it. An assessment of the composition of the poor and hungry indicates that they are mainly smallholder farmers, including livestock keepers, crop farmers and those dependent on natural resources such as forests and fisheries for their livelihoods. Roughly half of the 1 billion hungry in 2009 were small and medium holder farmers, 22 % are rural landless, 20 % are the urban poor, and 8 % are populations that depend mainly on natural resources, such as fishers, herders, and forest dwellers (Jacob,2015). Adams (2021) asserts, questions remain on whether these groups can organize to have to express their needs in improving production so they can have secure

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livelihoods. These clusters imply the eventual emergence of different interest groups around agricultural production but without adequate mobilization and support structures for these communities to make an input into the policies designed to improve their lives, chances are that they will remain locked in a dependence cycle that leaves them vulnerable to all kinds of shocks natural and economic. Chege (2016) embraced; sheer numbers of households dependent on smallholder agriculture for their livelihoods makes this an important aspect of food security in the developing world, particularly in Sub Saharan Africa.

Training is characterized as an instructor-led, content-based intervention leading to desired changes in behavior (Sloman, 2005) Opinions differ as to whether a 'changes of attitude' should be included in the definition of training. Wills (1994) argues against such a definition, because attitudes are notoriously difficult to quantify, and he argues that training a lone is insufficient to bring about major long-term changes in attitude. Instead, he defines training as 'the transfer of defined and measurable knowledge or skills'. Hare et al (1996) stated that training is any activity or course either formal or informal helps in acquiring the knowledge and skills to do your job. Overman (1994) argued that 'what people heart feel, they forget and what they see they remember.' Likewise, Hughey and Mussnug (1997) observed that 'most employees simply do not learn very well when they are 'talked to'. They need to be more actively involved in the learning experience.

The earliest roots of training as a concept can be traced back to the middle Ages in the form of apprenticeships (Shane, 2012). This evolved into vocational schools in the early 1800's (Desimone, Werner, &Harris, 2002). Apprenticeship programs were shortened and what is now known as job instructional training (JIT) was developed around the First World War (Desimone, Werner, & Harris, 2002). It wasn't until the twentieth century that training became a profession and formalized (Shane, 2012; Desimone, Werner, & Harris, 2002). The 1970's forever changed training to become what we know it as today. The workplace was filled with many different types of people: war veterans, great depression survivors, and young baby boomers; hence, forced employers to stray from one type of training that fits all and move towards a more focused training approach. Although training is still evolving today to make it more efficient, the workplace will never be able to conduct one training fits all again. The workplace is even more diversified today than it was then. Luckily, as technology advances it makes meeting the specific training requirements of each employee easier to accomplish. A variety of training methods have taken shape over the years. Lectures/demonstrations are the oldest forms and most traditional means of training. In its most basic state, lectures and demonstrations simply present information from the trainer to the trainee (Blanchard & Thacker, 2009). On-the-job training (OTJ) is the next most widely used training process. OTJ is considered another form of traditional training, occurring in the workplace and consisting of methods such as apprenticeship, internship, mentoring among others (Blanchard & Thacker, 2009).

Sustainable Food Security

Monitoring of Sustainable Food Security is critical in tracking progress towards sustainable development goal (SDG) 2 of achieving zero hunger. Three articles published by Food Security in 2021 address this topic. Guha and Chandra (2021) derive reliable and representative estimates of food insecurity indicators at district level for the state of Uttar Pradesh in India, using a multivariate small area estimation technique. The approach used by Sassi and Trital (2021) highlights the temporal and spatial dynamics of food security, and relied on a multi-group piecewise latent growth curve to model food security at household level in Kenya. Odhiambo, *et al*. (2021) compare an objective and subjective weighting approach for including the compo□nent of natural resources and resilience in the Global Food Security Index.

The production of food, vital to sustainable food security, remains an important theme. Of the 90 full articles published in 2021, almost one third are mainly related to sustainable food production. More than half of these studies attempt to demonstrate strategic linkages between food supply and other dimensions of food security such as food access to and utilization. Linking food production to the different sustainable food security dimensions remains a challenge. Producing food sometimes seems to be a long way from to achieving food security. This relationship seems tighter in the developing world. Cause and effect relationships across the many steps between food production and food security can be difficult to demonstrate rigorously. Many articles follow the best research practices. They also illustrate some of the challenges, however. Integrated studies are very rare, where nested aggregation levels (farm household, village, watershed, and region) are considered to analyze the relations between production resources (biophysical and socio-economic), agricultural technologies, food production, household income, and environmental impacts.

In the wake of the important articles by Powell *et al*., (2015) and by Sibhatu and Qaim (2018), the links between diversified agricultural production to diversity of food available and consumed, improved diets, nutrition and health, collectively have become a major theme for Sustainable Food Security. At least seven articles on such topics were published in 2021. For example Sariyev *et al*., (2021) show that agricultural production diversity in Ethiopia can lead to better diets for poorer subsistence-farming households with little income and distant from markets. Some of these relationships can be complex as reported by Bakhtsiyarava and Grace (2021) in Ethiopia too; while increased farm production diversity (more cereals and animal products) is usually associated with reduced risk of chronic sustainable food insecurity in children, excessively diverse food production may increase food insecurity in periods of low rainfall. The contribution to food diversity from non-agricultural production is illustrated by aquaculture in Bolivia (Irwin *et al.,* 2021) and by home gardens in Mexico (Castañeda &Navarrete, 2021). Several noteworthy articles linking agricultural resources and practices with food security were published in 2021. Irrigation is one of the best ways to ensure high agricultural productivity, but does this translate into food security for local communities? Kassie and Alemu (2021) find that the participants of an irrigation scheme in Ethiopia achieve higher incomes, but with no effect on food security under the considered settings. Beyond merely demonstrating linkages, understanding the mechanisms by which agriculture afects food security is necessary. Madsen *et al*., (2021) examine how agro ecologically-based soil management and crop diversification interventions affected household diets in Malawi. The study reports pathways to greater food security, which are reinforced by participatory learning, greater control over agricultural inputs and enhanced social support.

Another theme that continued to attract attention in 2021 involves change in the use and adoption of new and improved agricultural technologies and inputs, and the ensuing benefits for people and planet. This year the journal featured articles on climate-smart agricultural practices in Pakistan (ul Haq *et al*., 2021), fertilizer use for maize in Kenya (Jena *et al*., 2021) and varieties of different crops in India, Rwanda and Morocco (Danso-Abbeam *et al*., 2021; Kumar *et al*., 2021; Yigezu *et al*., 2021). ul Haq *et al*. (2021) document the adoption of a range of climate-smart practices in the Pakistan Punjab, and demonstrate that farm households using more such practices had greater food diversity and dietary intake. Not discussed in-depth so far in the literature, is what, exactly, makes some practices 'climate-smart'. This question deserves more attention in the future. In August 2020, Food Security published a Special Issue on the expectations and early effects of the Covid-19 pandemic on food systems. A follow-up article by

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Jacks *et al*., (2021) examines how the mid-2020 lockdown affected agricultural production in India. Farmers did experience delays in crop harvests, but reported more serious issues with the marketing of produce and a reduction in the diversity of foods available. Related articles are appearing online for full publication in 2022. The shape of farming and agricultural production in the future, with emphasis on sub-Saharan Africa, is addressed in two articles (Giller *et al*., 2021). The articles underline the multiple roles of farming and the dominance of family farms in most parts of the world. Much remains to be done to raise the economic viability of agriculture, especially in smallholder systems. The links between farming and food security are often good, but highly variable, showing the limitations of relying solely on agriculture for development. Small farms are expected to thrive and expand in size in the future. These authors emphasize the value of diversified, locally adapted and environmentally friendly farming systems.

The concept of food security was first used in the mid-70 s and evolved over time (Pinstrup-Andersen, 2009). While initially referring mainly to food supply, the concept soon involved the availability and access to food. Food security now makes explicit reference to the quality of food by including nutritious and dietary needs and preferences.

METHODOLOGY

The study employed correlation research design. In view of the current study, correlation design was used to describe how farmer capacity building practices relates to sustainable food security situation in Migori County; Kenya. The target population of the study comprised an aggregate of 227497 farmers' households from Migori County (Migori County Agriculture Office, 2019). Sampling frame consisted of 227,497 farmers' Households in Migori County; Kenya. The units of the study were small holder farmers in each in each sub county. The sample size in each sub county was apportioned in proportion to the target population.

The study used structured questionnaire as data collection instrument. Piloting was conducted with smallholder farmers in Rarieda Sub County. According to Yogesh (2006) in order for piloting results to be valid, it should involve respondents' equivalent to 10% of the sample size. In the current study, 38 farmers' Households were randomly selected and engaged in piloting the questionnaire. Data collected from the field was coded, cleaned, tabulated and analyzed using both descriptive and inferential statistics with the aid of specialized Statistical Package for Social Sciences (SPSS) version 24 software. The output of analysis was presented using tables to make them reader friendly. Descriptive statistics such as frequencies and percentages as well as measures of central tendency (means) and dispersion (standard deviation) was used. Further, inferential statistics such as regression and correlation analyses was used to determine both the nature and the strength of the relationship between the dependent and independent variables. The linear regression plus correlation analyses were based on the association between two variables. Study conceptualized Regression Model was as below;

$Y = \beta_0+\beta_1X_1 + \varepsilon$

Y = Sustainable Food Security

β_0 = Constant

X_1 = Farmer Training Practices

$\{\beta_0-\beta_1\}$ = Beta coefficients

ε = the error term

FINDINGS

The study involved 384 questionnaires being dispatched for data collection, 350 questionnaires were returned completely filled, and representing a response rate of 91% which was good for generalizability of the research findings to a wider population and 9% included those farmers that never responded.

Descriptive Statistics;

Farmer Training Practices and Sustainable Food Security

Most respondents agreed (27.1%) that experienced farmers shape inexperienced farmers with the

initiatives of being in the bracket of future development activities. while 15.4% disagreed to the statement, implying that there are farmers who are not optimistic with future developments of farming. More closely, only 27.4% agreed while 12.6% of respondents strongly agreed that the farmers are frequently engaged in seminars. Further, while 27.7% of respondents agreed that most farmers engage in conferences for technical improvement practices while 12% strongly agreed for the same. 40% agreed and 8.6% strongly agreed revealing existence of farmers leaning on professional development. More so 36.6% of respondents agreed and 12.9% strongly agreed that the farmers are coached by agricultural instructors. or customer segments, while 42.9% of respondents also agreed that customer data is well captured and secured by the agency banking system; thus indicating that agency banking has not really been embraced by some bank customers.

Lastly, most respondents agreed (42.9%) and strongly agreed (12.6%) that generally, the farmers community shape each other. Gigia (2018) asserts farmer field schools in particular, which may be one component of broader agricultural extension services; use a more 24 bottom-up approach to training and knowledge transfer. Farmer field schools are participatory, empowering and experiential in nature, focusing on problems and priorities identified by the farmers, rather than on issues and challenges determined. According to FAO (2013), the World Summit declaration on Food Security, it exists when all people, at all times, have physical and economic access to sufficient, safe, nutritious food to meet their dietary needs and food preferences for an active life.

Inferential Statistics;

Linear influence of Farmer Training Practice on Food Security

This tested the direct influence of Farmer Training Practice on Sustainable Food Security in Households in Migori County; Kenya. R^2 = 0.069; implying that 6.8% variations in the Sustainable Food Security in Households in Migori County; Kenya is explained by Farmer Training Practices while other factors not in the study model accounts for 93.1% of variation in Sustainable Food Security in Households in Migori County; Kenya. Further, coefficient analysis shows that Training Practice has positive influence though weak on Food Security of Migori County; Kenya (β = 0.210 (0.073); *at p<.05*). This implies that a single improvement in effective Training Practice will lead to .210 unit increase in the Sustainable Food Security of Migori County; Kenya. Therefore, the linear regression equation is;

(i) $Y = 3.436 + 0.210X_1$

Where;

Y = Sustainable Food Security

X1 = Farmer Training Practices

CONCLUSIONS AND RECOMMENDATIONS;

Farmer Training Practices and Food Security

This tested the influence of Farmer Training Practices on Sustainable Food Security in Households in Migori County; Kenya. The study found that Farmer Training Practices had an influence on Sustainable Food Security.

The study results are consisted with earlier researchers that found that Farmer Training Practices was relevant in the agricultural sector inclusive of building the farmers together, more so, the Farmer Training makes the farmers understand what they are doing and what they should in order to improve food security.

CONCLUSIONS AND RECOMMENDATIONS

There was a statistically significant weak positive correlation between variations in Farmer Training Practices and Sustainable Food Security. Training of farmers is attributed to the variation in Sustainable Food Security. The contribution of training to Sustainable Food Security in Households in Migori County; Kenya was reflected, though noticed presence was negligible.

The study therefore recommends field agricultural officers should intensify the use of such Practices as

Farmer Training Practices with a view to enhancing sustainable food security.

Areas for further research

Future researchers should therefore have other areas being researched on since environment differs and economic capabilities vary from one area to another to test the significance of Farmer Training Practices on Sustainable Food Security. The study should be extended further by including more independent variables and more so, use other methods for analysis.

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