Food Diversification: Challenges and Opportunities for Pastoralist Women in Isiolo County, Kenya

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12.1 Introduction

Gender roles within African households and communities are complex and cannot be simply summarized. However, there are key responsibilities for women and for men, especially in nomadic lifestyle. Among the pastoralist communities, women bear increasingly heavy loads when providing for their households, which influence girls' education and constraints their contribution in community life (Birch & Shuria, 2017). According to Lin (2011), on a daily basis, pastoralist women need to work for longer hours than men in satisfying their duties in their household. The duties include and not limited to providing daily dietary meals for the entire household, a responsibility which has become unachievable due to various underlying challenges. Among the key challenges is lack of food diversification. As a consequence, in 2018, 18% of children below the age of five in Isiolo County were reported to be suffering from acute malnutrition, with the situation expected to deteriorate (Mugo, 2018).

According to Waha et al. (2018) and Amwata et al. (2016), the occurrence and severity of climate blows such as floods, drought, cold, heat, rampant high food and non-food prices, livestock diseases, conflict stress and crop failure have increased and compounded the already unwarranted food security in the Arid and Semi-Arid Lands (ASALs). In Kenya, just like other East African countries, the country is faced with hunger and poverty, and these troubles are getting worse year after year, overburdening and frustrating pastoralist women in their line of duty. In Amwata et al. (2016) findings, it is anticipated that more than 14.3 million people or 60% of

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the population live below the poverty line whereas 52.9% and 34.8% live in rural and urban areas, respectively. This situation has worsened with the negative socio-economic impact of COVID-19 and lack of enough rains (WFP, 2020) especially in the arid areas like Isiolo County where communities are now frequently dependent on relief support (CRS, 2021).

However, despite the reoccurring challenges, farmers in East Africa have also reformed to climate change impacts by diversifying their livelihoods undertakings. This means, for example, distributing the risk between diverse crop and livestock types or maximizing the range of agricultural products for sales (Mutie et al., 2013). Food diversification has aided in increasing the farmers' capacity to cope with variation (Antwi-Agyei, et al. 2014) and even sell own products for inclusive food security results and especially for agriculturalists in sub-Saharan Africa (McCord et al., 2015). For instance, purchased food in Ethiopia accounts for a large quantity of household consumed calories, one third to more than half of all calories (Sibhatu & Qaim, 2017).

On the contrary, just across the border (less than 1000 km) in Isiolo County, there seems to be a challenge of food diversification due to high dependency on one type of livelihood – livestock. Experts like Famine Early Warning Systems Network (FEWS NET) agree that persistence of food insecurity across pastoral areas is characterized by below-normal livestock assets from time to time and the high dependency on livestock limited incomes to poor households' ability to meet their food security needs (FEWS NET, 2021). This is a real experience in Isiolo County where 69.8% of the county's population lives below the poverty line with 60% of the population in central division of the county being food insecure (Lin, 2011). This study then sought to investigate the challenges that affect food diversification among pastoralist women who are on the frontline of food provision in their households, while identifying the opportunities for a food secure and peaceful coexistence in Isiolo County, Kenya.

12.2 The Implication of Food Diversification for Food Security

Food diversification can be described as a broader presence of variety food for a long period of time. According to Rahadiandy (2014), food diversification is one of the key strategies on food security improvement. Continuous diversification of food varieties certainly enhances the household access to food security. Across the world, food diversification has already become an interesting and urgent public issue to attain food security (Manda et al., 2016). However, communities' paradigms of specific local diets, for example, "You have not eated yet until you eat 'rice' among the Indonesians, injera for Ethiopians, 'meat' among the pastoralists, 'cereals' among the Bantu communities across Africa" among others, have been a threat to the adoption of food diversification in many regions across the world (Shoffner & Tooker, 2012).

According to FAO report (2018), many people lack acceptable amounts of foods that are rich in the nutrients required for a healthy and fruitful life. Over 200 million people are affected by chronic undernutrition in sub-Saharan Africa. Such people are deficient in iron, vitamin A and iodine. Malnutrition in sub-Saharan Africa has augmented people's vulnerability to infections, causing numerous deaths (Makate et al., 2016). To overcome this challenge, communities in sub-Saharan Africa ought to adopt to climate smart agriculture as one of the sustainable agricultural practice that can make families endure the harmful effects of climate change (Faurès et al., 2013) and unpredictability in prone zones (Manda et al., 2016).

In pastoralist communities, engaging in both livestock and crop growing as well as agribusiness can be a simpler way of overcoming food insecurity threats while maintaining nomadic practice to some extent. According to Rosenstock et al. (2016), this is also an integrated approach to the execution of agricultural development strategies to improve yield, people wellness and environmental outcomes across sub-Saharan Africa. A study by Makate et al. (2016) on crop diversification and smallholder farmers' livelihoods in Zimbabwe indicated that diversification has a positive and significant impact on two food security indicators (food consumption score and household dietary diversity score), with a coefficient of 3.495; an impact which is likely to increase with an input of livestock to crop diversification. Such a positive and significant finding is also reflected in other related studies (Manda et al., 2016). According to Ojaghian et al. (2012), diversification can be effective in destroying diseases and pests, increasing soil productiveness and the efficiency of local natural structures for agriculture. This makes diversification very significant to pastoralist communities in adapting to natural calamities and unpredictability as a number of challenges in ASALs can be reduced thus helping to build long-term resilience (Lin, 2011).

Generally, men in pastoralist communities have high passion for animals, and it is part of their key roles to care and provide for such animals. This makes them influence the nomadic lifestyle which to a certain extent affects food diversification (KDHS, 2014). On the other hand, women as the key providers for household meals are better placed in adopting to dietary feeding for their households, hence promoting food diversification compared to men. However, pastoralist communities are patriarchal, meaning that even if women understand the value of food diversification, they are limited in employing the mechanism to achieve it (Chege et al., 2015). For instance, even though women could have access to resources like land, they rarely have the control or cannot make decisions in its use and the distribution of benefits (Sharaunga et al., 2016). When there are opportunities, women attend trainings and education on nutrition and feeding from various NGOs. Unfortunately, such empowerment rarely bears fruits because decisions on the community's progress are made by men. According to Njuguna-Kimwadu (2020), pastoralist women lack experience, access to information and new technology. When it comes to climate change, women and girls tolerate the greatest weight of drought, mainly because of the gendered division of labour at household level and lack of decision-making power over the possibilities of survival (Nyasimi et al., 2014). Therefore, life-threatening drought brings a bigger burden on women. They have to perform

their generative and creative roles, and contribute more to household adaptation with less capacity and capability. Women suffer more the consequences of food insecurity and related risks; bearing in mind that they do not own the capital, cannot make decisions over resources and have limited opportunity to participate at community-level participation (Yiampoi, 2014). Understanding the magnitude of women's enablement that can influence food diversification among pastoralist households is then vital for strategy development and practice (Sharaunga et al., 2016).

Food diversification among pastoralist communities seems to be a collective agenda given the cultural domain. Both women and men have to equally take part in nutrition and feeding education in order to adopt food diversification for food security (Gitungwa, 2018). Additionally, rainfall variability can also be a key aspect to consider in enhancing food diversification. A study by Waha et al. (2018) found that rainfall is a strong driver to food diversification, and rainfall variability (17–22%) is a good portion for identifying areas with high diversification potential. However, rainfall is not the only influential factor to agronomists' choices of crop and livestock. Households might still be limited in their ability to diversify by unfavourable soils (Faurès et al., 2013), or labour, input and land limitations, or their remote location without access to extension services that provide support for diversification management techniques (FAO, 2018; WorldBank, 2014). This then calls for a deeper investigation to the challenges of food diversification as key to curbing food insecurity among pastoralist communities. Diversification of food has an undeviating effect on food availability and nourishment. This is mainly because it improves yields, brings crop and vegetable stability and also has an insurance effect since if one food domain fails the household can depend on the other (Njeru, 2013). Additionally, food diversification can help in building resilience among pastoralist communities as well as allowing more efficient utilization of environmental processes for human diet and income which improves the purchasing power of the household for other foods (Njeru, 2013).

12.3 Challenges and Opportunities of Food Diversification

Actors in food security are progressively focusing on food diversification as a strategy to promote agricultural progress because it offers chances to decrease production and price risks, increase elasticity, incomes, and sustain yield and development (Petit & Barghouti, 2012). This is because food system management relies on a rational set of procedures, existing technologies, skills, rules, cognitive routines and values which shape the action of the food system actors and beneficiaries from production to consumption (Morel et al., 2020). A study by Elzen et al. (2012) that explored the challenges for innovations designed either outside the dominant food systems for sustainable agriculture transition realized that there are various challenges and opportunities which can be identified as "changing from within" and "building outside." Gaitán-Cremaschi et al. (2019) points out that changing from within opportunities aim to develop inventions that can be compatible with existing

infrastructures and norms of the given community and ecosystem. However, this can slow the maximum number of blocks that are related to adoption of diversification strategies, practice and also integration of new foods in historically simplified and short-term production systems (Herond et al., 2017). Conversely, the outside innovation should not be intended to change the values of the dominant culture (Yiampoi, 2014). In Morel et al. (2020) discussions, majority of the challenges in this case are more related to the development of new value chains and operationalization of food diversification.

In pastoralist communities, food diversification has been faced by various challenges. According to Chege et al. (2015), nomadic culture has been a big hindrance to food diversification. For instance, livestock among the nomadic people are considered a sign of affluence, thus mainly slaughtered on special occasions by men. Additionally, selling of animals or their products is not encouraged, therefore limiting income that would improve the food basket (Ongeri & Mathara, 2014). Consequently, some food taboos (Amwata, 2013) prohibit pastoralist women consuming animal products, while the community does not eat chicken and fish limiting the household food diversity. Consumption of vegetables is limited since they are perceived to be livestock feed (Chege et al., 2015). Additionally, the belief that land is only for grazing contributes to low crop production, thus lack of food diversification. In this case, pastoralist women are limited since they are neither involved nor do they make decisions (Sharaunga et al., 2016). Kittler et al. (2011) reported a relationship between culture and dietary habits. Cultural beliefs are an indicator of what a particular traditional community values as important diets as well as diets that should not be consumed. This highlights that culture influences diets' adoption and consequently the food security status of a region. Conversely, pastoralist women are known as the custodians of traditional ethics and principles, much more than men. Though women take this as a source of authority, they still remain vulnerable because traditions are imposed by men (Munyasi et al., 2012). Women health and social status are unfavourably affected as well as their ability to participate fully in building health communities (Mango et al., 2014). Since nomadic people still strongly hold the cultural practices, there seems to be information gaps on how their culture affects food diversification practices. It is in this view that the study examined the challenges on food diversification in Isiolo County, a home for nomadic people.

Other challenges to food diversification include and not limited to lack of need-based community empowerment, insecurity, diminishing range of lands and natural calamities. According to Michler and Josephson (2017), there has been much less research focusing on the contribution of pastoralist communities on food diversification towards achieving food security, despite indication that more diverse agro environments are likely to perform better today and under changing environmental conditions (Lin, 2011). Although livestock has remained the basis of survival among nomads in Kenya, there is increasing pressure on this very form of survival. This pressure includes, but is not limited to, insecurity, diminishing range lands, cattle raids, and low livestock prices (Omollo, 2017). This highlights the need to identify key strategies to overcome and prioritize the challenges for sustainable food security.

A common characteristic of the pastoral areas is low and erratic rainfall associated with recurrent droughts, making poor quality pastures a major constraint to livestock production (Irungu et al., 2014; Gikaba et al., 2014). In Kenyan ASALs, livestock production is the main economic activity and it supports over 14 million people and 70% of the total country's livestock population (Kidake et al., 2016). Seeking alternatives to livestock pastures could then be of great input to the community and food diversification. Pastoralist women are culturally known as the custodians of milk product; hence, given the opportunity to commercialize it, they can create income for food diversification (MacOpiyo et al., 2013). However, this opportunity has not been well trapped due to natural pasture degradation that has been pointed out as the most limiting reason to livestock production in ASALs of Kenya (GoK, 2011). According to Joosten et al. (2014), the unsustainability of animal pastures among the nomads has extensive effects of low production of milk and meat, which increases vulnerability of pastoral livelihoods (MacOpiyo et al., 2013). Another opportunity is the availability of various organizations both private and government serving in the area. Such organizations offer empowerment to these communities. According to Sharaunga et al. (2016), the advancement of enabling women as a development goal is based on a dual argument. First, the focus on social justice as an important aspect of human well-being is fundamentally worth pursuing, and second, women advancement is a means to other ends like food diversification. However, as discussed earlier, such empowerment and especially on food diversification should be inclusive and need-based. According to Mbogori (2014), pastoralist women are often left out from civic life and economic discussions. This greatly affects their contribution when it comes to implementation.

As a consequence, pastoralist women today are more vulnerable. This is attributed to their lack of participation in decision-making. Therefore, conscientization of such a challenge should be enhanced if pastoralist communities still commit to be part of food security activities. Since women play a key role in food diversification, their empowerment on the same should incorporate men who are key decision makers in the same communities (Munyasi et al., 2012). The need-based empowerment enables adoption of tailor-made practices which can be sustained locally (Ogachi, 2011). However, movement of animals to different places in search for water and pasture by men remains a hindrance to process. According to Sharaunga et al. (2016), need-based empowerment approach can support women to start simple kitchen gardens, rear few goats for milk (GoK, 2015) and tap into other alternatives which could enable them provide meals for their households.

Tapping into the new government structure and infrastructure in Kenya could also be a great opportunity to food diversification. Another challenge facing women pastoralist is balancing the time spent on domestic transport tasks so as to rearrange more time to remunerative activities (Mango et al., 2014). County governments, CSOs and NGOs interventions among pastoralist communities must recognize and address gender role imbalances, so as to reduce vulnerability, inequality and indecency. Working with pastoralist women to tackle specific limitation to their contribution to food diversification will provide them with a chance to attain greater influence, respect and ultimately representation in political leadership (Mbogori,

2014). Having more women in leadership will enhance capacity and transformation of rigid traditions which affect food diversification among pastoralist communities.

12.4 Methods

The study adopted a mixed method approach where both quantitative and qualitative research approaches were employed. The mixed method approach helped to generate information on food diversification among the pastoralist women as well as identifying challenges and opportunities for food security in Isiolo County. The choice of mixed method approach also helped to strengthen the research findings since the data was sought using survey questionnaires and focused group discussions. Though the questionnaire had both open and closed-ended questions, the qualitative aspect helped the researcher to understand the attitudes, behaviours, values, fears and concerns as well as the motivations to food diversification in a more humane way given the level of education of the target population.

Survey questionnaires and focused group discussions were used to collect data. The target population of the study was 128,483 females from 31,326 households in ten wards of Isiolo County according to 2019 census of Kenya. The study purposively targeted women who were directly responsible in bringing food to the table at their households. A key consideration was the age bracket due to pastoralist cultural norms which allow girls to be married at a young age. However, the level of education was not a key variable since the research assistants understood the local dialects.

Purposive sampling was then used to acquire the sample population of 100 women from the ten wards (ten women from each ward) of Isiolo county of whom the questionnaire was administered. Two focused group discussions consisting of ten women each were held. The participants for focused group discussions were randomly selected from the 100 sampled women from the ten wards.

The collected data from the field was systematically organized and subjected to analysis. Quantitative data was examined through descriptive statistics and inferential statistics while qualitative data was organized in themes and presented in narrative forms. Conclusions and recommendations were then drawn from qualitative and quantitative results. Research ethical considerations were made prior to data collection. The researcher obtained a clearance from the university research ethical committee and also acquired a research permit from the NACOSTTE. Participants' consent was also upheld as well as the researcher stating in the data collection instruments that the information acquired was for educative purpose and policy feedback to support the pastoralist communities in food diversification and that the participants' personal details were not to be disclosed.

12.5 Results and Discussions

12.5.1 Demographic Information

Demographic information in any study helps to understand the characteristics of the research participants. According to Muteshi (2018), the pastoralist cultural practice tends to promote early marriages among girls due to the practice of female genital mutilation, a practice that reflects girls readiness to get married. Age bracket was very important in this study since most of the women who suffer the challenge of food diversification are young girls who are already married instead of being at school.

12.5.1.1 Age Range of the Respondents

Figure 12.1 presents the age bracket of the respondents. The results show that the women involved most in feeding their households were of ages 21–30 (35%), 31–40 (30%) and 10–20 (25%). The findings show that only 10% of the women aged 40 years and above participate actively in feeding their families. The above finding concurs with Chege et al. (2015) that women are limited in employing the mechanism to achieve food diversification, a factor which is influenced by age and lack of authority. This came out very strongly during the discussions whereby women noted that pastoralist women have two voices. One for normal talk and another (softer) for responding to men and boys. As they advance in age (above 40 years), they are less involved in household shores but become custodian of the culture even though it makes them vulnerable.

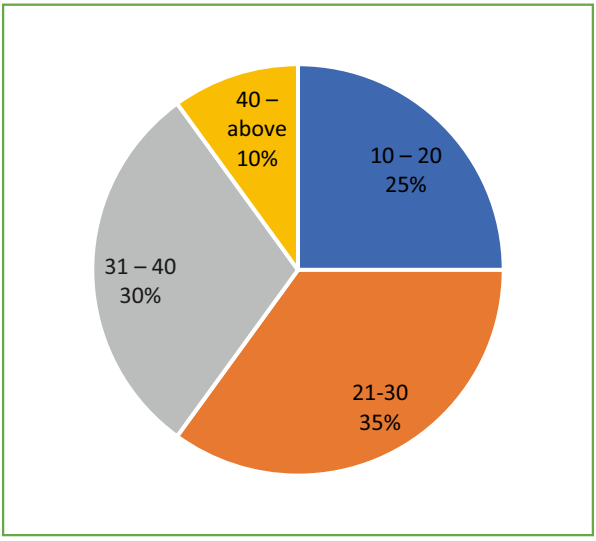


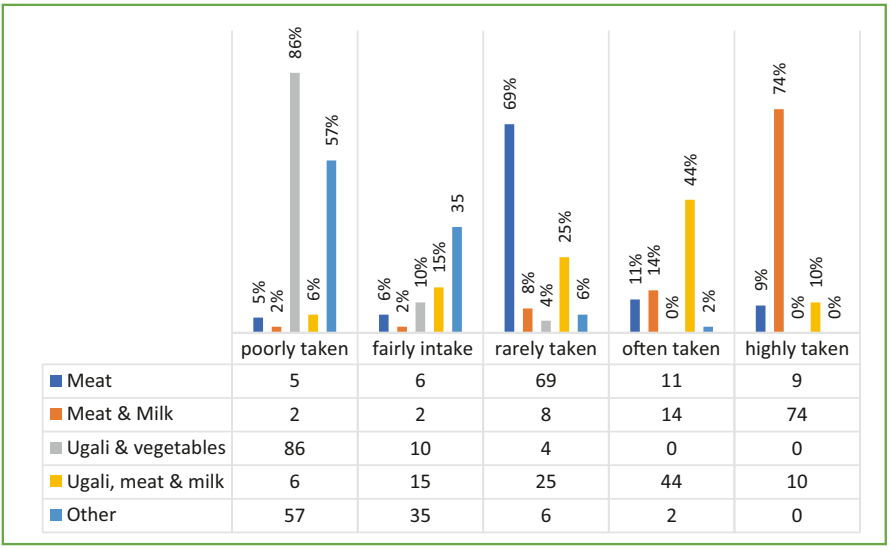
Fig. 12.1 Age range of the respondents

12.5.2 Understanding Food Diversification and Its Value Among Pastoralist Women

This study sought to understand food diversification and its value mong the pastoralist women in Isiolo County of Kenya. According to Rahadiandy (2014), food diversification can be described as a broader presence of a variety food for a long period and it is a key strategy for food security. Food diversification is then of great value to pastoralist communities who are prone to food insecurity periodically (Munyasi et al., 2012). The key variables used to help understand food diversification and its value were the most consumed food type, availability of the common meal across the year, effects of food diversification trainings on meals change and the motivation factor to food change among the pastoralist women.

12.5.2.1 Rate of Food Type Consumption

Figure 12.2 shows the rate at which different kinds of foods are taken by the pastoralist households. Though agriculture in Isiolo County takes preference of four main crops (maize, beans, sorghum and green grams) and livestock (indigenous cattle camels, sheep, and goats), vegetables seem to be poorly taken with 86% of the respondents raising an alarm. Though there is availability of beans, sorghum and green grams, meat and milk are the most highly taken meals at the pastoralist communities households. Meat alone is rarely taken (69%) as compared to when it is taken alongside milk (74%). This relates very closely to focused group findings where women noted that they rarely take meat because most of the times animals are slaughtered only during celebrations of which only men are allowed to attend. On the other hand, milk is the only animal product which women have a bigger



	poorly taken	fairly intake	rarely taken	often taken	highly taken
Meat	5	6	69	11	9
Meat & Milk	2	2	8	14	74
Ugali & vegetables	86	10	4	0	0
Ugali, meat & milk	6	15	25	44	10
Other	57	35	6	2	0

Fig. 12.2 Most consumed food type

share. The other kinds of meals are porridge and wild fruits which are consumed mostly during drought seasons. It is also important to note that the interaction of pastoralist and other communities, especially in Isiolo North sub-county, has fairly influenced consumption of ugali, vegetables and other foods. This shows that the pastoralist community can embrace food diversification and enhance food security given the right environment and surrounding (Mbogori, 2014).

12.5.2.2 Availability of the Common Meal Across the Year

In the previous finding (See Fig. 12.2), the respondents identified their common meal or type of food which their households prefer amidst other types of food. The study sought to find out the availability of identified common food types. The results show that the identified common foods are not 100% available throughout the year with percentage response of 97% (ugali, meat and milk); 95% (meat) and 81% (meat and milk). Having 81–97% availability of the meal in a year should raise concern but it is not a cause for alarm because there are other products that can be taken. This is attributed to the impact of weather change in the pastoralist areas whose indicators are recurrent droughts, making poor quality pastures a major constraint to livestock production (Irungu et al., 2014; Gikaba et al., 2014). Additionally, Amwata et al. (2016) reported an increase in frequency and severity of climate shocks such as drought, floods, hotness, coldness, widespread high food and non-food prices, livestock infections, conflict stress, and crop failure as factors that have increased and compounded the already unwarranted food insecurity in the ASALs. Consequently, the outcome of this result indicates a greater burden on women (Yiampoi, 2014), and therefore, understanding the magnitudes of women's enablement that affect food security among pastoralist households is crucial to inform strategy development and practice (Sharaunga et al., 2016). Empowering women without consideration of the role played by men in the community is a waste of resources and therefore there is need for more research on the community needs in order to offer an all need-based capacity building (Valcheva, 2014). The result is also in line with the pains expressed by women during the focused group discussions that, "during hard times we suffer a lot as we are exposed to lots of pain and stress due to long distance walk. First to look for water and alternative food stuff (properly at the centres where the relief is given) and the vulnerability of seeing our children and the elderly die; unable to help…", Mrs Oloi (not the real name) from the first focused group discussion.

Based on Fig. 12.3, the women also expressed that they may not know the nutritious value of the other types of foods distributed during the "lack" times. Their experience of preparing such foods is not good due to lack life skills. It is also difficult to introduce new types of foods to the elderly due to the underlying customs. From the group discussions we find that women do not bother to share the information about the new foods with others because each of them experiences similar pains. Manda et al. (2016) expressed similar emotions when they noted that though food diversification has already become an interesting and urgent public issue globally, the communities' paradigms of specific local diets are a great impediment. The high dependency on livestock across pastoral areas limits incomes to poor

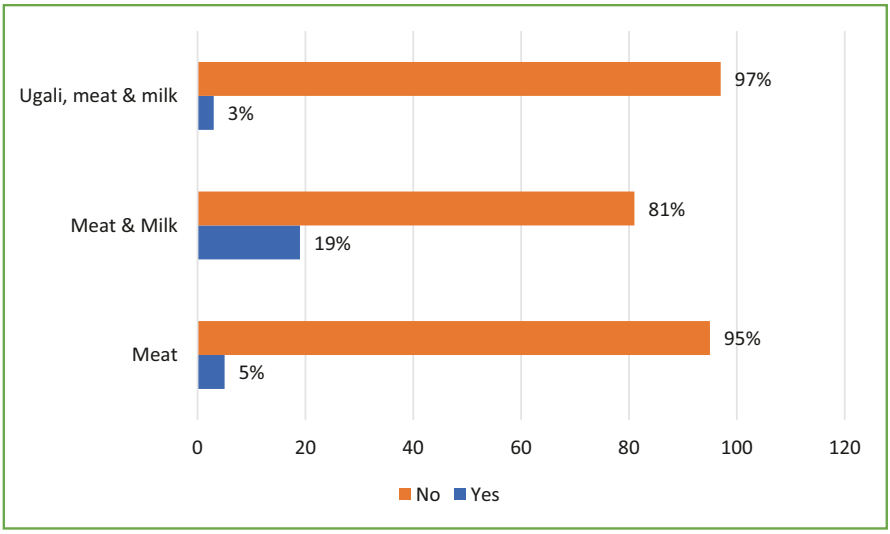


Fig. 12.3 Availability of the common meal across the year

households' ability to meet their food security needs (FEWS NET, 2021). The result is also a reality which concurs with Lin (2011) findings where 69.8% of the county's population live below the poverty line and 60% of the population in central division (areas of Merti and Garbatulla sub-counties) are food insecure. Generally, this requires great intervention from the local governments and also the development partners in enhancing sustainable food diversification programs.

12.5.2.3 Effects of Food Diversification Training on Meals' Change and the Motivating Factor(s) to Food Change

The study sought to investigate the effects of food diversification training carried out in Isiolo County. The researcher has been doing her community engagement in Isiolo County for some years now. The program on alternative livelihoods has been seen to bear fruits but in very limited rates due to many underlying factors which draw from the pastoralist customs, natural calamities and lack of enough resources to promote the agenda. Figures 12.4 and 12.5 present findings on whether the efforts of the livelihood program in the locality has had any positive results on food diversification and what could have been the motivating factor(s) to the change of meals. The result from Fig. 12.4 shows that 57% of the respondents did not have a positive effect of the food diversification trainings as opposed to 43% who said that there was a positive effect. The high finding (57%) can be attributed to some of the challenges pastoralist women go through in their communities. For instance, it was noted in the review of literature that women get opportunities and attend trainings and education on nutrition and feeding from various NGOs. Unfortunately, according to Njuguna-Kimwadu (2020), such empowerment rarely bears fruits because decisions on the community's progress are made by men and also because

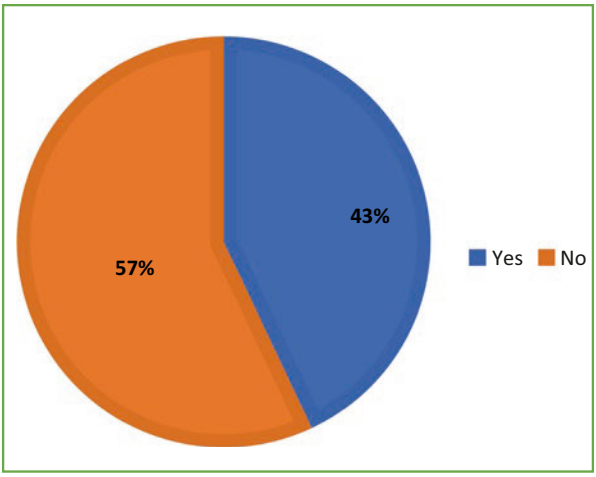


Fig. 12.4 Effects of food diversification training

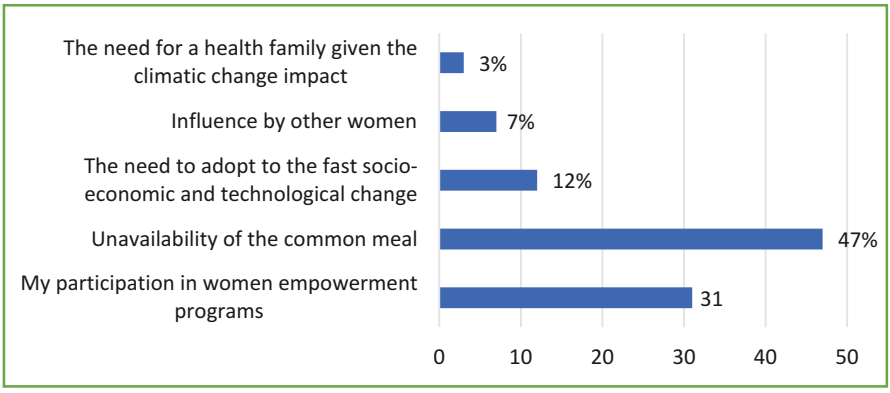


Fig. 12.5 Motivating factor(s) to meals' change

pastoralist women lack exposure, access to information and technology which are key drivers to food diversification implementation. This concurs with the result on the highest score (47%) of the motivating factor (unavailability of the common meal) to food diversification. Though women may have gone through various trainings, their need to adopt to new dietary meals is not measured by the skills and knowledge acquired during the trainings but by the unavailability of the common meal. However, there seems to be some light since 43% of the respondents also felt that the training have had a positive effect on their food diversification. That means that pastoralist continuous participation on empowerment programs (31%) and the enlightenment (12%) of the need to adopt to climate smart agriculture as one of the sustainable agricultural practice can make pastoralist communities endure the harmful effects of weather change and unpredictability in prone zones (Manda et al.,

2016). However, Mbogori (2014) warns the practitioners empowerment on food diversification should be inclusive and need-based.

12.5.3 Challenges and Opportunities in Food Diversification

Petit and Barghouti (2012) notes that actors in food security are progressively focusing on food diversification as a strategy to promote agricultural progress because it offers chances to decrease production and price risks, increase elasticity, incomes, and sustain yield and development. Generally, a kind of a strategic move mostly portrays challenges and opportunities and therefore investigating on the same was ideal for this study.

12.5.3.1 Common Challenges Faced by the Respondents

This study sought to investigate the challenges faced by pastoralist women in enabling food diversification in their communities. Figure 12.6 presents the finding of the most common challenges faced by pastoralist women while implementing food diversification. Most of the challenges seem to spread across cultural practices, norms and taboos, self-determination and limited skills and knowledge on the importance of adopting new meals. The results show that 51% of the respondents identified meals rejection by male gender as the biggest obstacle to food diversification. This is followed by lack of acceptance from the wider family (23%) and threats from the family clan (8%). Lack of confidence (11%) can be attributed to fear of facing a disciplinary team as expressed during focused group discussions. Lack of skills on how to prepare new meals (7%) is also of concern. Most challenges to food diversification can be identified as "changing from within" and "building outside"

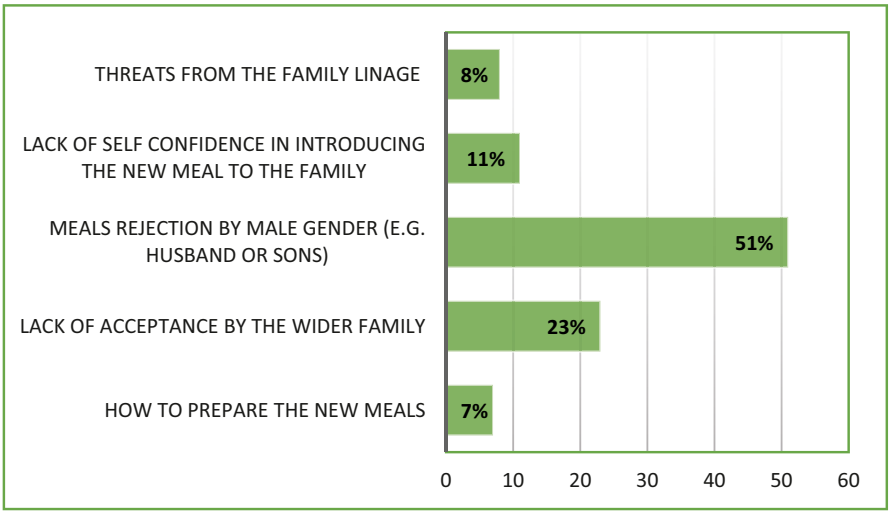


Fig. 12.6 Common challenges faced by respondents

(Elzen et al., 2012). The uppermost number of blocks are related to adoption of diversification strategies, practice and also integration of new foods in historically simplified and immediate production schemes (Herond et al., 2017). Yiampoi (2014) therefore warns that the outside innovation should not be intended to change the values of the dominant culture but to transform them for a better life.

12.5.3.2 Available Opportunities Identified by the Respondents

Figure 12.7 presents the results on the available opportunities as noted by the respondents. The results show that there are possible opportunities of which pastoralist women are quite aware and can be a driving force towards adoption of food diversification strategies. Thirty percent of the respondents noted that availability of food alternatives in the locality can influence the change while 28% saw education for their children as an opportunity for future change in the community on food diversification. The availability of food alternatives can be attributed to climate smart agriculture (Manda et al., 2016) which has been identified as a tool to enhancing food security in ASALs (Lin, 2011). Formal education also is very important because it enlightens the learners on the existing and new opportunities on food diversification. Tapping into the county governments' leadership and CSOs interventions on inclusivity will help address gender imbalances in terms of representations in leadership positions as well as combing the pastoralist tradition (5% movements). Such an empowerment will then reduce women exclusion and decrease their liability, disparity and filth practices like female genital mutilation (FGM) that increase their vulnerability to early marriages (Mango et al., 2014).

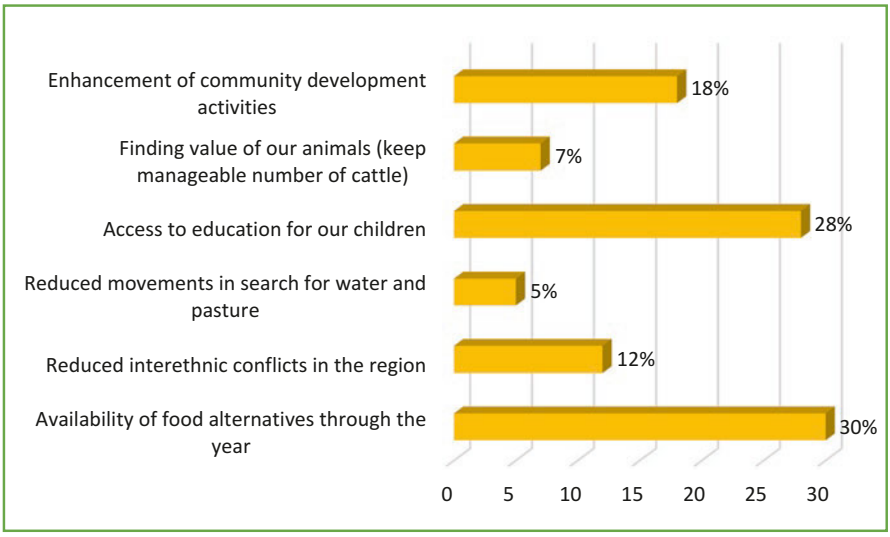


Fig. 12.7 Available opportunities identified by the respondents

Other possible opportunities are the enhancement of community development activities (18%) and reduction of interethnic conflicts (12%). Food diversification requires conducive environment to allow communities engage harmoniously in various and indence activities. According to Rahadiandy (2014), food diversification is one of the most significant strategies on food security improvement. By diversifying food varieties overtime, it certainly enhances the household access on food security proportions. To diversify on both livestock and crops growing peaceful, coexistence is important. Pastoralist communities are sometimes under threat of cattle raids and other nomadic practices, a challenge which destabilizes the environment. According to Rosenstock et al. (2016), it is important to adopt an integrated approach (livestock and crop growing) to the implementation of agricultural development strategies that seek to improve productivity, community wellness and environmental outcomes across sub-Saharan Africa. This has been seen to create value (a coefficient of 3.495 and an impact likely to increase with an input of livestock (7%) to crop diversification) in food diversification through the study on crop diversification and smallholder farmers' livelihoods in Zimbabwe. Additionally, diversification can be effective in suppressing pests and diseases, improving soil richness and the effectiveness of local agricultural environmental structures (Ojaghian et al., 2012). Consequently, food diversification is very important to pastoralist communities in adapting to vast change and unpredictability as a number of problems in ASALs can be compacted in severity, hence building long-term flexibility to weather changeability and other problems is of essence (Lin, 2011).

12.6 Summary of the Chapter

The purpose of this study was to investigate the value of food diversification while pointing out the challenges pastoralist women face in adopting to new types of foods and the opportunities they ought to tap amid deeply rooted tradition within the threat of change. The study was carried out in Isiolo County among the pastoralist women who were purposely sampled from a population of 128, 483 females in 31,326 households in 10 wards of Isiolo County, according to 2019 population census in Kenya. The study targeted women who were key providers of food in their households ranging between 10 to over 40 years of age according to the pastoralist traditions. The study employed a mixed methods approach where survey questionnaires and focused group discussions data collection tools were used. Purposive and random sampling procedures were used to select the sample respondents. All ethical considerations were observed and research assistants were of great importance to the study.

The results show that food diversification is an important strategy to food security despite the various challenges that block the implementation of food diversification process among the pastoralist communities. Some of the main challenges faced by pastoralist women in food diversification are and not limited to pastoralist cultural norms and taboos (influence decision-making, gender roles and responsibilities and type of food), nomadic practice (high dependence on livestock and

movements in search of pasture and water), natural calamities like drought, floods, diseases and pests, interethnic conflicts, climate change and uninclusive empowerment (only women are trained on nutrition and feeding and yet they do not make decisions on food choices in their communities), just to mention but a few. However, despite the challenges, there are opportunities the pastoralist women and community at large can take advantage of. These include formal education for their children, availability of climate smart agriculture (Lipper et al., 2014) to combat climate change, the presence of local leadership to promote local initiatives for food security and the presence of development partners for need-based and inclusive empowerment.

The study proposes intensive community empowerment through need-based and inclusive capacity building on climate smart technologies, promotion of food diversification awareness either through organized events or celebrations to facilitate and create awareness on how to prepare and consume other foods. These can be done through the researcher's alternative livelihood projects during the community engagement in Isiolo County.

The study recommends enhancement of the collaboration between local leadership and other development partners to reinforce existing and start new initiatives to promote viable environment for food diversification among the pastoral communities. Such initiatives should be transformative in a way that they promote people's dignity and cultural values.

12.7 Conclusion

Women play a key role in ensuring a healthy and fabulous community in various traditional communities. Among the pastoralist communities of Kenya, women between the age of 10 and 40 years have a high responsibility of feeding their households while women above 40 years are known as the custodians of the pastoralist culture. The young pastoralist women must work longer and tougher than men, fulfilling their roles in the families which include and not limited to providing daily dietary meals for the entire household, a responsibility which has become unachievable today due to various underlying challenges. However, despite the rejection of new meals by male gender (51%); the availability of food alternatives throughout the year (30%) and access to education for their children (28%) as opportunities to food diversification gives them hope of living a better tomorrow. Tapping into these opportunities among others is then a means of reducing pastoralist women's pains and creating a platform for more gains through food diversification for sustainable food security.

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