

Gender Inequality and Climate Change Adaptation Strategies for Food Security in Tanzania

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1.0 INTRODUCTION

All over the world the ownership and management of land and other production resources by men and women are often defined by culturally specific gender roles. In many traditional workload women are the most vulnerable and marginalized group in the society linked with disproportional gender based division of roles (FAO, 2011; Chigbu, 2015). In most societies, there are differences and inequalities between women and men in assigned responsibilities, activities undertaken, access to and control over resources, as well as decision-making opportunities. It is common that, women may be involved in production but might not own the production resources, including land and water (Meinzen-Dick, *et al.* 2010; Doss *et al.*, 2014; Doss *et al.*, 2015).

Around the world rural women play important roles in planting, weeding, postharvest processing, food preparation, and all other activities around food provision to the household members (Agarwal 2003; FAO, 2011). It is estimated that in Southeast Asia women provide up to 90 % of the labour involved in rice cultivation and that sub-Saharan African women produce up to 80 % of basic foodstuffs for household consumption and sale (FAO 2007) but own less than one percent of land. Women takes part in livestock keeping covering both small stock like poultry and goats to large stocks such as dairy cow for ensuring food security and generation of income for other household needs (FAO, 2011).

In developing countries, Tanzania inclusive food production depends largely on weather conditions which are currently unstable as a result of climate change. Climate change has been experienced all over the world as one of the most significant challenges facing human society in the 21st century (IPCC, 2014). However, the global climate change has disproportionate negative impact on developing countries, particularly in Africa, south Asia and parts of Latin America because of geographical fragility of some areas and their less adaptive capacity (Wright and Boorse, 2017; Phan, *et al.*, 2019). In Africa, climate change has resulted into more frequent and severe extreme weather events such as droughts and floods, with increasing risk to natural resources dependent livelihoods such as pastoralist and small scale rain-fed dependent farmers. The climate change impact threatens their household food security.

As a result of climate change impact communities including the pastoralist tend to adapt to the ensuing conditions in different way between men and women because of gender based disparities in resource ownership, decision-making and division of roles within households and communities. Women are traditionally expected to play a critical role in ensuring food security for their households despite the disadvantaged position they hold in owning prime productive resources like land and in earning incomes to access modern production

technologies as strategies to adapt to climate change. However, some of the adaptation strategies lead to increased workload in the household and reduces the time to be spent by women in food preparation activities which contributes to malnutrition especially to children which is one of the manifestations of food insecurity.

In many developing countries, including Tanzania food insecurity may be caused by the unavailability of food, insufficient purchasing power, inappropriate distribution or inadequate utilization of food at the household level. These causes may either be associated with ineffective formal and informal institutions including government policies and gender inequality respectively or the natural and manmade disasters (FAO, 2011; Biggs *et al.*, 2015). In this context, deployment of strategies to adapt to climate change as one of the natural disasters has triggered changes in traditional division of labour while ownership of land and other production resources like livestock remains under men's custody.

However, food production by women remain greatly affected by inequalities in ownership of land among other production resources and other gender relations aspects pertaining to division of labour and decision-making which contributes to household food security (Cousins, 2011; UN, 2013; Ravera *et al.*, 2016; Doss, *et al.*, 2017). The existence of gender inequality thwarts attainment of the Sustainable Development Goals (SDGs), especially goals 2 and 5; which aims at ending hunger, achieve food security and improved nutrition and promote sustainable agriculture as well as achieving gender equality and empowering all women and girl respectively. In resolving the problems associated with gender inequalities one of the SDG targets insists on undertaking reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws (UNDP, 2018).

However, in Tanzania the government has taken initiative of enacting gender sensitive Land Act No.4 and the Village Land Act No. 5 of 1999 with the intension of reducing gender inequality in women's control over land and facilitate access to financial services to support women as producers and providers of food in the household. Despite all the government efforts the problem of food insecurity remained persistent in some areas where 55 districts (out of 169 in Tanzania) were facing food shortages (TWAWEZA, 2017).

Food security is important for reduction of hunger and poverty to attain sustainable development. Hence, addressing the gender inequality in aspects of production resources ownership and access at household provides information guide for the formulation of equitable policy and strategic enforcement mechanisms on effective resource use for food security and attaining the SDGs. The main objective of the paper is to assess gender inequalities and climate change adaptation strategies in relation to food security using a case of pastoralists of Kilosa District, Tanzania. The paper specifically examines firstly, the gender inequality in terms of ownership of resources, especially land, division of labour and decision-making. Secondly, it determines climate change adaptation strategies pursued by pastoralist for household food security.

2.0 METHODOLOGY

In the quest to meet the above said objectives the study deployed a cross-sectional research design in which data were collected only once from the population of pastoralists households. Pastoralists' households formed the unit of analysis from which primary qualitative and quantitative data were obtained through interview and questionnaire methods respectively. Secondary data were obtained through review of different secondary sources such as books, research reports and journal articles on gender relations, climate change adaptation strategies and food security. Primary quantitative data were analysed by using IBM SPSS Statistics computer programme, version 22, where descriptive statistics like frequencies and percentages were computed. Qualitative data were analysed using content analysis in which data were put into small themes and summarized to supplement the information obtained from the questionnaire.

3.0 RESULT AND DISCUSSION

The results indicate that women do not have equal control over crucial production resources including land and they face imbalance household division of labour and decision making.

3.1 Gender inequality in Resource (Land) Ownership, Division of Labour and Decision-making

3.1.1 Resource ownership

Table 1: Distribution of responses on gender based household resource ownership

Resource ownership variable	Gender	
	Female	Male
Household income		✓
Land		✓
Cattle		✓
Kitchen ware	✓	
Motorcycle		✓
Radio		✓
Mobile phone	✓	✓
Livestock products (milk, ghee, skin, hide)	✓	✓

As the results in Table 1 show men owned most valuable resources such as household income, land, livestock and in some cases motorcycle and radio. Also men owned other, less valuable resources like motorcycle, radio, mobile phone and livestock products. The only resource owned by women alone was kitchen ware, and this could most likely be due to the fact that women are the ones responsible for food preparation. According to UN Millennium Project (2005) and Quisumbing (2003) the situation exists throughout the developing world, where women rarely control land and other productive resources.

It was revealed in the present study by one of the participants in a Focus Group Discussion (FGD), a 47 years old man concerning the ownership of resources in the household, stating as follows:

In our society a man owns almost everything within the household including livestock, children and land; and can buy things like radio, bicycle, mobile phone and motorcycle because he also has control over the household income, while a woman owns only water keeping vessels and other kitchen ware. When a woman is married in a house, she comes empty handed; hence nothing belongs to her in the household. However, nowadays a woman can own a mobile phone in rare cases, but of poor quality (low price). This is possible for a woman, especially if she sells milk. Likewise, a woman should not be given a room to make decision in the household because this is against our traditions. She should be submissive to her husband.

Lack of ownership of productive resources like household income, cattle and use of land renders women unable to engage in income generating activities such as running small business due to lack of financial capital. It is also argued by Alemu (2015) that the ability of households to generate sufficient income to purchase food in times of need is adversely affected by depriving women of income ownership rendering it unable to access food.

3.1.2 Gender Division of Labour and Household Food Security

The results indicate that women shoulders lion's share of the household chores. The chores undertaken by women in pastoralist society included milking, selling of milk and other animal products, collecting firewood, fetching water, food preparation and purchasing, cleaning of the surroundings as well as caring for children, the sick and the old people and young animals. Men were only involved in few, activities such as food purchasing, grazing and selling of animals.

Table 2: Distribution of responses on gender based household division of labour

Division of labour variable	Gender	
	Female	Male
Milking	✓	
Selling of milk	✓	
Selling of other animal products e.g. milk, ghee, skin	✓	
Collecting firewood	✓	
Fetching water	✓	
Food preparation	✓	
Cleaning of the surroundings	✓	
Purchasing of food	✓	✓
Caring for children, the sick and the old people and young animals	✓	
Grazing of animals		✓
Selling of animals		✓

As indicated in the results among the 11 identified household responsibilities men and boys were involved in only three of them, testifying that women carry out heavier workload in comparison to their counterpart men. This contributes to low household food security especially in terms of insufficient frequency of meals provided to the household members that may be associated with reduced time for food preparation and serving in addition to other causes of food insecurity such as low availability of foods due to low harvests and low purchasing power. This was narrated by one of the respondents as follows:

“We sometimes eat only two meals per day because sometimes we do not cook due to shortages of food in the household, but also we do not have time to cook particularly during afternoons when we find preoccupied by so many other activities. We therefore skipping afternoon meals but at least having something before we go to bed. It is also convenient time when every member of the household is around”

This finding implies that inequalities in household division of labour is still a challenge impinging the contribution of women in achieving food security for the household and general wellbeing.

3.1.3 Decision-making

Gender inequality in decision-making exists in many communities Tanzania as well as in other the developing countries concerning various aspects. In this study several aspects were considered as indicated in Table 3.

Table 3: Distribution of responses on gender based household decision-making

Decision-making variable	Gender	
	Female	Male
Children’s education		✓
Buying food for daily and future use		✓
Size of the herd to be kept		✓
Selling and buying animals		✓
Migration		✓
Use of land		✓
Engagement in income generating activities		✓

The findings show that the decisions on various aspects are done by men. These aspects include decision on children’s education, buying food for daily and future use, size of the herd to be maintained, selling and buying animals, migration, use of land and involvement in income generating activities. It was discovered in this study that there was gender biased decision-making; there was no joint decision-making between men and women in the household – as collective model suggests. Brody, *et al.* (2008) argue that women are more likely than men to be absent from decision-making, whether in the household or at community, national or international levels, either because their contribution is not valued or because they do not have the time, confidence or resources to contribute. A related study conducted in East Africa on climate change, gender inequality and migration by Abebe (2014) found that despite various reforms, rural women in the region still struggle to participate in decision-making processes.

3.2 Climate change adaptation strategies in pastoralist society

The paper found that although respondent were drawn from pastoralist society which is generally known to rely mostly on livestock keeping but in controversy, to the large extent food availability to the household depend on crop cultivation as strategy to adapt to climate change. Thus, the respondents were dealing with both livestock and crop farming as the major means of sustaining their livelihoods.

Table 4: Distribution of respondents according to climate change adaptation strategies

Adaptation strategy	Male		Female		Total	
	No.*	%	No.	%	No.	%
Crop farming	5	10	8	16	13	26
Selling animals	5	10	6	12	11	22
Migration	7	14	3	6	10	20
Shifting to new areas	6		3	6	9	18
Fencing reserve pasture	3	6	4	8	7	14
Total	26		24	48	50	100

The study findings show that the main strategy used by the respondents in the study area to adapt to climate change was crop farming which was mentioned by 26% of the respondents. Other adaptation strategies were selling of animals mentioned by 22%, migration 20%, shifting to new area 18% and fencing reserve pasture 14% of the respondents. The respondents reported that crop farming was being practiced mostly by the poor households which have less number of animals, while the rich ones seem to have accumulated a diverse stock of animals such as cattle, goats and sheep which they can sell some to purchase food and other household needs.

Another strategy as revealed in this study was selling of animals. The households used to sell old animals, sick ones, and those which have given birth two times and more. This strategy helps to reduce the herd size as well as providing income for household immediate consumptions, such as investment in crop farming. Some pastoralists use the income as a start up capital when migrating to town. It is argued by Yanda and Moshy (2007) that in addition to help in escaping seasonal and other climatic variations among pastoralists selling of animals prevents environmental degradation which can be caused by excessive number of livestock in one area.

According to the findings migration was another strategy used to adapt to climate change. It was claimed by the respondents that migration involves poor household who do not possess the necessary assets to migrate. These include such households which do any longer have animals to sell so as to earn income for purchasing food and also to use some of the income as a start up capital to invest in new economic activities. As a result they tend to engage in casual wage labour especially in security sector as security guards.

During migration it is men who migrate to urban areas in search for wage employment. This phenomenon has led women and young girls to shoulder the herding task which was traditionally a men's role, resulting into increased workload for women. It was also reported elsewhere that gender differentials exist in terms of who migrates, where they migrate to, for what reason and for how long (Jolly and Reeves, 2005; Chant, 1998). Women have no choice in determining decisions over their own or others' migration where usually they remain back to maintain their homestead.

Shifting to new areas or relocation was another climate change adaptation strategy used by the respondents. This strategy is used as a remedy to resource scarcity which normally occurs during drought. It has also been reported by Paavola (2003) that, as a consequence of resource scarcity in pastoral dominated regions of Tanzania, like Shinyanga, Arusha and

Dodoma; huge influx of pastoralists with large herds of livestock to Morogoro region has been observed. This however, causes a lot of environmental degradation such as soil erosion due to the movement of the herds of livestock.

Another strategy used by the respondents to adapt to climate change was by fencing reserve pasture. This is used as a traditional method of conserving parts of pasturelands as preparedness to curb disasters of drought incidences. During drought this strategy helps in feeding weak stocks such as sick, young and lactating animals which cannot travel long distance for grazing. Such a method enables them to survive during the drought season and reduce deaths of weak individuals. According to Yanda and Moshy (2007), apart from helping pastoralists adapt to climate change, this strategy not only alleviates dry season fodder shortages but prevents environmental degradation such as soil erosion, and helps conserve biodiversity.

4.0 CONCLUSION AND RECOMMENDATIONS

The paper concluded that gender inequality renders women more vulnerable to climate change impact because of disadvantaged power to own and use of resources like land, income and increased workload associated with climate change adaptations. Decision on use of different climate change adaptation strategies which have immediate effect on food security are done by men and the burden for providing adequate food for the households has therefore shifted more to women. Also, less availability of pasture and water due to climate change impact among the pastoralists has forced them to practice crop cultivation alongside livestock keeping.

This paper recommends that the government should enhance enforcement of the laws that guarantee women's access to and control over land and other resources to enhance food productivity for food security. Also gender sensitive policies and strategies regarding household division of labour, ownership of resources and decision-making are required to lessen women's vulnerability to climate change impact which has destabilised some traditional roles and cause overburden to women. Also gender should be mainstreamed in all government responses to climate change, including policies and strategies since it affects women and men differently because they have different roles in the household and community. It is important to take measures to ensure that the impact of climate change do not further impoverish women and plunge them into the perpetuation of food insecurity. Apart from the strategies implemented by the study community, other adaptation strategies should be encouraged in the study area including use of modern technology in both livestock and crop production, establish reliable early warning systems and rainwater harvesting infrastructures, to ensure food security.

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