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The Linkage between Institutional Changes and Food Security in Mtwara Region, Tanzania

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ABSTRACT

This study focuses on the linkage between institutional changes and food security in Mtwara region. Institutional changes in terms of increase numbers of financial, commercial, hospitalizes, education, infrastructures and improved moral and altitudes of farmers have a direct relation with food availability and accessibility. Both formal and informal institutions have potentials to help improvement of food availability and accessibility. However, despite institutions dealing with food security having changed in Mtwara, food security is low. The fundamental question is which one among these institutions, has high impact on food security. This study sought to determine the linkage between institutional changes and food security in Mtwara region. The specific objectives of the study were to identify institutions existing and their functions at household level, analyze various sources of food grains and states of food security at the household level in Mtwara region, and assess the linkages between institutional changes and food security. Structured questionnaire, Focus Group Discussion and Oral interview had been useful for collecting primary information in which the best recorded interviewees were analyzed supplemented by documentaries (text and photography). Findings revealed that financial institutions and education have high impact on food security in the study area. Generally, this study concluded that banks, SACCOS, traditions (moral, attitudes, beliefs), and roadshave slightly difference effect on food security. Since 2010these institutions had been increased and improved and have a direct relation with food security. It is recommended that the, government and other stakeholders should create true transformation in rural people to provide them decent jobs, good living conditions, and different opportunities in order to maintain youth to stay in rural area for maximizing the food production. Further studies should be done on the factors influencing people to stay in rural areas in which agricultural activities are being done.

Key words: Institutional changes, Food Security, Agriculture, Mtwara Region, Tanzania

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INTRODUCTION

FAO (2011a) defines food security as: "When all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life." Magadoff and Tokar (2009) concluded that 12% of the global population, approximately 36 million people- suffer from hunger and live without secure access to food. Decreased food production in sub- Saharan Africa, increases in the price of food, and growing production of bio-fuels are responsible for current rates of food scarcity.

The people most severely affected by food insecurity are those already living in poverty of which sub-Saharan Africa has the largest proportion. The number of food insecure people in the world was projected to decline in 2010 as the global economy revived following the 2008 financial crisis, but 16% of the population in developing countries including Tanzania remains food insecure (FAO, 2010). According to Pinstrup-Andersen and Cohen (2000), food insecurity and malnutrition result in serious public health problems and loss of human potential in developing countries.

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According to Müller et al. (2011), the food security situation across the country is mixed, reflecting irregular rainfall distribution across agro-ecological zones and many other factors like institutional changes which may cause opportunities and barriers. Tanzania, like other developing countries in sub-Saharan Africa, is faced with challenges of food insecurity. Based on a caloric poverty line of 2,200 kcal per adult equivalent per day, the food insecure people are 16.6% (URT, 2009). Many Tanzanians including people living in Mtwara Region appear to be deficient in food energy and unable to sustain their expected levels of physical activity (URT, 2010). The incidence of food insecurity in Mtwara Region is 26.2% unlike 16.6% of the people that are food insecure nationally, based on a caloric poverty line 2,200 kcal per adult equivalent per day (URT, 2009). Unfortunately, the full potential of the humanity institutions to create food security in Tanzania as well as in Mtwara has not been well reported.

Institutions are the set of rules, norms, beliefs (informal) and organizations including family, financial, markets, education, politics, policies, mass media and religion (formal) which govern the human interaction (North, 1990 and Greif, 2006). This study will concentrate only on beliefs, norms, and traditions in which the changes may help food production. Dimensions of food security in Tanzania are taking place in institutional changes day to day because of the opportunities available. Currently, Tanzania emphasizes on four major adaptation investment areas to foster a growing and resilient agricultural sector in changing institutions. These include agricultural research, extension, expansion of irrigation, and road infrastructure development, as emphasized in various agricultural development policies, strategies, and programmes (URT, 2007; URT, 2010). But little has been reported on how humanities institutions may facilitate or hamper food production in Mtwara region.

Problem Statement and justification

State of food insecurity found still serious or alarming problem in 50 developing countries worldwide in which Tanzania is inclusive. Several international reports notes that decline of food insecurity must accelerate in these countries if the world is to achieve zero food insecure people by 2030 (FAO, 2016). In Tanzania more than 10% people are food insecure in which Mtwara region has more than 16% (URT, 2015). The dependent on rain, soil infertility, lack of proper education, and poor agricultural technologies, small farm size are the most potentials challenges to Tanzanian to achieve the MDGs of halving the hungrier in 2015 (Shole, 2016). Transformation of farmers, politicians and government leaders should be done in order to achieve the new SDGs of 2015 aimed at zero hungrier in 2030.

This study focuses on the linkage between institutional changes and food security in Mtwara region. Informal institutional changes in terms of improved moral and altitudes of farmers have a direct relation with food availability and accessibility. Norms, values, beliefs and traditions ways of farming and formal institutions like Dar-Mtwara high way, commercial, hospitality, financial, and education have a potential to help improvement of food availability. However, despite institutions dealing with food security having changed by increasing or improved in Mtwara, food security is low. The fundamental question is which one among these institutions, has high impact on food security.

The probable answers to which institutional changes bring more benefits of food security may be changes of Norms, customs, values, beliefs and traditions ways of farming have potential to help improvement of food security. However, it is not known whether any of these institutional changes holds the truth and answer to the question of the extent to which human institutional changes affect food security. Therefore, the aim of this research is to determine the influence of changes in these institutions on food security.

However, despite institutions dealing with food security having changed in Mtwara Region, food security is low (food insecurity is relatively high). One may ask among these institutions, which one has high impact on food security in Mtwara Region.

Significance of the study

Generally, this study will create awareness to the community and individuals. Thus, the findings will reveal the relationship between humanistic institutional changes and food security (food availability and accessibility). Information obtained was useful in improving life standards of people. It was also useful to study area by using the knowledge obtained by the study.

Research objective(s)

This study sought to determine the linkage between institutional changes and food security in Mtwara region. The specific objectives of the study are stated below:

- To identify institutions existing and their functions at household level
- To find out various sources of food grains and states of food security at the household level in Mtwara region
- To assess the linkages between institutional changes and food production.

Hypothesis

This study focuses on the linkage between institutional changes and food security in Mtwara region. Institutional changes in terms of improved moral and attitudes of farmers had a direct relation with food security (availability and accessibility). Norms, values, beliefs and traditions ways of farming have potential to help improvement of food security.

LITERATURE REVIEW

Theoretical review

Evolution theory of institution change

Structure, habits theory of an institution change

Bourdieu (1990) extends the theory of structures and claims that the individual is influenced by the practices of behaviour in its immediate environment. This implies that the individual is determined by the institutional environment, and can only act within the given structures of his/her environment. Therefore, the individual is not only influenced by formal structures but also by the practices of actors.

Ortner (1989) combines practice and structure; she argues that structures 'are grounded in recognizable practices of ordinary life' Structure oriented approaches argue that structures determine the environmental perception of individuals. The open coridal in Southern Tanzania will increase interactions and new knowledge on agricultural activities will be gained by indigenous from foreigners.

Entitlement to food theory of food security

Entitlements have been defined by Sen (1981, 1984) as "the set of alternative commodity bundles that a person can command in a society using the totality of rights and opportunities that he or she faces". It should be noted immediately that this is a descriptive rather than a normative concept; entitlements derive from legal rights rather than human. In Sen's framework, people destitute by famine are not entitled to food; instead they are "entitled to starve" (Edkins, 1996). Despite its normative connotation, an entitlement "does not reflect in any sense a concept of the right to food".

A person's "entitlement set" is the full range of goods and services that he or she can acquire by converting his or her "endowments" (assets and resources, including labour power) through "exchange entitlement mappings". In the context of poverty and famine, the entitlement approach aims comprehensively to describe all legal sources of food, which Sen (1981) reduces to four categories: "production-based entitlement" (growing food), "trade-based entitlement" (buying food), "own-labour entitlement" (working for food) and "inheritance and transfer entitlement" (being given food by others). Individuals face starvation if their full entitlement set does not provide them with adequate food for subsistence. Famine scales this up: occupationally or geographically related groups of people face famine if they simultaneously experience catastrophic declines in their entitlements.

One of the most limitations of this theory is that people's actual food consumption may fall below their entitlements for a variety of other reasons, such as ignorance, food habits, or apathy and cultural believes.

In respect to my study, the Bourdieu theory of habitats and practice is going to be assessed its application on food security and institutional change. Habitus is the term coined by Bourdieu to capture the influence of established practices in the immediate environment of individuals on their behaviour. Also food entitlement theory of food will be used to link the food security availability and accessibility by the citizens of Southern Tanzanian.

Related Review

Worldwide, around 925 million people are food insecure, while up to 2 billion people lack food security intermittently due to varying degrees of poverty. Six million children die of hunger every year – 17,000 every day (FAO, 2010). Magadoff and Tokar (2009) concluded that 12% of the global population, approximately 36 million people- suffer from hunger and live without secure access to food. Decreased food production in sub- Saharan Africa, increases in the price of food, and growing production of bio-fuels are responsible for current rates of food scarcity.

The people most severely affected by food insecurity are those already living in poverty of which sub-Saharan Africa has the largest proportion. The number of food insecure people in the world was projected to decline in 2010 as the global economy revived following the 2008 financial crisis, but 16% of the population in developing countries including Tanzania remains food insecure (FAO, 2010). According to Pinstrup-Andersen and Cohen (2000), food insecurity and malnutrition result in serious public health problems and loss of human potential in developing countries.

According to Müller et al. (2011), the food security situation across the country is mixed, reflecting irregular rainfall distribution across agro-ecological zones and many other factors like institutional changes which may cause



opportunities and barriers. Tanzania, like other developing countries in sub-Saharan Africa, is faced with challenges of food insecurity. Based on a caloric poverty line of 2,200 kcal per adult equivalent per day, the food insecure people are 16.6% (URT, 2009). Many Tanzanians including people living in Mtwara Region appear to be deficient in food energy and unable to sustain their expected levels of physical activity (URT, 2010). The incidence of food insecurity in Mtwara Region is 26.2% unlike 16.6% of the people that are food insecure nationally, based on a caloric poverty line 2,200 kcal per adult equivalent per day (URT, 2009). Unfortunately, the full potential of the humanity institutions to create food security in Tanzania as well as in Mtwara has not been well reported.

Agriculture is the major source of food and is also the major source of income in Tanzania, where it provides employment for about 80% of the population. The agricultural sector accounts for about 24% of GDP, 30% of export earnings, and 65% of raw materials for domestic industries (URT, 2011).

Institutions are the set of rules, norms, beliefs (informal) and organizations including family, financial, markets, education, politics, policies, mass media and religion (formal) which govern the human interaction (North, 1990 and Greif, 2006). This study will concentrate only on both formal and informal institutions in which the changes may help food production. Dimensions of food security in Tanzania are taking place in institutional changes day to day because of the opportunities available. Currently, Tanzania emphasizes on four major adaptation investment areas to foster a growing and resilient agricultural sector in changing institutions. These include agricultural research, extension, expansion of irrigation, and road infrastructure development, as emphasized in various agricultural development policies, strategies, and programmes (URT, 2007; URT, 2010). But little has been reported on how institutions may facilitate or hamper food production in Mtwara region.

One of the targets of Millennium Development Goal 1 is to "halve, between 1990 and 2015, the proportion of people who suffer from hunger." The FAO Rome Declaration on World Food Security, formulated at the 1996 World Food Summit, aims to "eradicate hunger in all countries with an immediate view to reducing the number of food insecure people to half their present levels no later than 2015." Progress towards the MDG 1 target is slow, with the share of food insecure people in the developing world declining from 20% in 1990 to 16% in 2007. However, the percent of official development report towards agriculture decreased dramatically from 18% in 1979 to 5.5% in 2004, while the number of hungry people in the world, sub-Saharan Africa, Tanzania and Mtwara Region particular had remained high (FAO, 2012).

Food insecurity in Mtwara Region is high compared to the national level, while the climate is conducive for food production. Knowing other possible causes of food insecurity in addition to institutional changes will help the author to come up with empirical information which can inform strategies to solve the problem of food insecurity in Mtwara Region. Therefore, there is a need for more research whose results will assist to stabilize food security in the country (Müller *et al.* 2011). This research will deal with the implications of institutional changes for food security.

The transformation of Tanzania's agriculture is underscored in various national policies and frameworks including the Tanzania Development Vision 2025, the National Strategy for Growth and Reduction of Poverty I and II (NSGRP I & II), MDGs, the Agricultural Sector Development Strategy (ASDS) (URT, 2008), and the recent Tanzania's green revolution initiative known as *Kilimo Kwanza* (Agriculture First) (URT, 2011). Therefore, the research has direct relationships with these national and global strategies in order to inform strategies to improve food security in Tanzania as well as in Mtwara Region.

Paucity in Literature

In spite of efforts which were made to review previous related literatures, the author did not find any one who exactly had done research on institutional changes and food security particularly positive linkage between institutional changes and food security. Only few researchers whose were closely related to this one determined the institutional determinants of food security. Therefore, among other things, this research is aimed at generating new knowledge to increase literature on linkage among institutions, institutional changes and food security.

RESEARCH METHODOLOGY

Multistage sampling was used to select 240 households. The research was a cross-sectional one and was conducted through structured interviews using a questionnaire, focus group discussions and key informant interviews. Statistical Package for Social Science (SPSS) software was employed to obtain descriptive and inferential statistics like frequencies and F-test by one way ANOVA to obtain the significance of variables.

Food grains available or obtained at household level in terms of the amount harvested, bought, work for food and received freely per capita per year and per adult equivalent per year. According Brown and Kane (1994), the cut-off point of grains consumed per adult equivalent in Tanzania which is 270 kg per adult equivalent per year was employed in order to know the status of food security of the household in the study area Mtwara Mtwara rural district in Mtwara region.

FINDINGS AND DISCUSSION

Institutions existing and their functions at household level

Table 1: Institutions existing and their functions at household level (N=240)

Institutions	Functions	Response	
		YES %	NO %
Dar-Mtwara high way	Enhance access to food and agricultural inputs	93	7
Financial (saccos and banks)	Source of fund for agricultural investment	100	0
Commercial	Source of fund	100	0
Guest house, hostel, hotel & restaurants	Source of fund	94	6
Education	Facilitating changes of beliefs, traditional ways of farming and the use of improved technology in agricultural activities	100	0
Tradition ways of farming	Cultivating very small farm size	100	0
(use of local tools like kingondola)			

Source: Field Data, 2015

Dar-Mtwara high way as an infrastructure institution: During the study the respondents were asked to say yes or no whether Dar-Mtwara high way enhance or facilitate them to access food. According to the results (Table 1), 93 percent of respondents indicate that they do access food through that high way by using it as a means of transporting food from other regions and from neighbor district. This meant that there is high improvement of agriculture farming by using this high way bringing the required inputs for maximization of crop production in the study area.

Financial institutions: Also, in this study the respondents were asked to say yes or no whether health workers are enough at their respective health facilities. According to the results (Table 1), all respondents 100 percent indicate that financial institutions like banks and SACCOS act as a real source of fund for buying seeds, tools for agriculture and inputs like fertilizers for improving their crop production. This meant that there is high improvement of agriculture farming by using this institution the required inputs for maximization of crop production in the Tanzania.

Commercial activities: According to the results (Table 1), 100 percent of respondents indicate that they do get money through doing different business like firms, mama ntilie and other in which they get fund for investing in agriculture and buying food

Hospitality institutions: According to the results (Table 1), 94 percent of respondents indicate that they do get money through being employed in providing services in hostel, hotel, guest and schools in which they earn income for buying food and investing in food production

Education: According to the results (Table 1), 100 percent of respondents indicate that they do get knowledge from schools, media, and college. The knowledge makes them to be aware with a lot of what happening in different parts of the country. This is always done through interaction with others in which thy share knowledge and improve what the know about crop production

Traditional ways of farming: According to the results (Table 1), 100 percent of respondents indicate that they do get insufficient food crops because of the use of local tools in cultivation known as kigondola so they cannot farm large farm size as a result they produce very low amount of food in which they always food insecure

Sources of food grains and states of food security at the household level in Mtwara region

Table 2: Sources of food grains and states of food security at the household level in Mtwara region (N=240)

Sources of food grains	Amount of food grains available or obtained		Food secure ≥ 270 inTanzania	
	Amount (kg)	Percentage (%)	Food secure	Food insecure
Maize, rice and millet produced	74,922	35.1		
Maize, rice and millet bought	129,348.4	60.5		
Maize, rice and millet Received	7,803.7	3.7		
Maize, rice and millet Work food	1,629.8	0.8	78.7	21.3

Source: Field Data, 2015

In the context of food status of the people in the study area, the entitlement approach aims comprehensively to explain all right sources of food, which Sen (1981) reduce to four types: "production or growing food, trade or buying food, own-labour or working for food and inheritance or transfer or being given food entitlement". From table 2, it revealed that 35.1%, 60.5%, 3.7%, and only 0.8% of all total grains was obtained from own production through harvest, buying, receiving free and work for food respectively. As it has been indicated the major source of food in Mtwara region is food through buying and the least source of food was work for food.



From these findings, shows that 60.5% of all food grains was obtained through buying because peoples in Mtwara they obtain food to access at market rather producing enough food for their own. Some of the respondents stated that "the lack of appropriate technology for agriculture is the key obstacle for them to produce enough food. Most of us we are using poor technology like kingondola hoe in which we cannot cultivate large farm size for sufficient production and make food available at our home". Therefore, these findings were in line with the theory of food entitlement that A person's "entitlement set" is the full range of goods and services that he or she can acquire by converting his or her "endowments" (assets and resources, including labour power) through "exchange entitlement mappings".

However, based on the cut-off point of grains consumed per adult equivalent in Tanzania which is 270 kg per adult equivalent per year (Brown and Kane, 1994), it was found that 21.3% of the households were food insecure, since the grains available for them were less than 270 per adult equivalent per year. The average amount of grains obtained was 350.93 kg; the minimum was 122 kg, and the maximum was 843 kg per adult equivalent per year. The amounts of grains harvested, received freely from relatives and bought are summarized in table 2.

The linkages between institutional changes and food availability in terms of grains obtained by production, buying, being given and work for food

Table 3: The linkage between institutional changes and food security (N=240)

Institutions	F-value	Probability (p)
Dar-Mtwara high way	0.158	0.692
Financial (saccos and banks)	49.111	0.000
Commercial (market)	21.134	0.000
Guest house, hostel, hotel & restaurants	2.789	0.96
Education	57.233	0.009
Technology	86.443	0.000
Informal (Traditional)-local	8.421	0.896

Source: Field Data, 2015

Referring table 3, the findings from this study indicated that the amounts of grains in Kg obtained per adult equivalent per year was not significantly differed (F= 0.158, P >0.05) among households who are not nearby the Dar –Mtwara high way. The results imply that households far away the high way does not benefit much in transporting their food in which this controversy with literature that the more well off infrastructure the more the benefits. Similarly, in households depend on hospitalizes services and traditional ways of farming for generating income for buying food and production, they obtained lowest grains (F = 2.789, 8.421, P >0.05)

It was further observed that, financial (F = 49.111, p < 0.05), commercial (F = 21.134, p < 0.05), education (F = 18.233, p < 0.05) and technology (F = 36.443, p < 0.05) respectively the results revealed to be significant different. This means that these institutions linked more with food availability in terms of grains obtained. The results were similar to the observations made in a study conducted by Mende *et al.* (2014).

CONCLUSION AND RECOMMENDATION

It is concluded that norms, moral, attitudes, beliefs, roads, banks, SACCOS has slightly difference effect on food availability and accessibility. Since 2010 up to date these institutions had been increased and improved and these institutions have a direct relation with food security. The major source of food in Mtwara region is food through buying and the least source of food was work for food.

It is recommended that the, government and other stakeholders should create true transformation in rural people to provide them decent jobs, good living conditions, and different opportunities in order to maintain youth to stay in rural area for maximizing the food production. Further studies should be done on the factors influencing people to stay in rural areas in which agricultural activities are being done

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