



Cultural and demographic conditions for smallholder-based agriculture and food security in Malawi

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Today more than 800 million people around the world suffer from chronic hunger and about 2 billion from under-nutrition.

This failure by humanity is challenged in UN Sustainable Development Goal (SDG) 2: "End hunger, achieve food security and improve nutrition and promote sustainable agriculture".

The AgriFoSe2030 program directly targets SDG 2 in low-income countries by translating state-of-the-art science into clear, relevant insights that can be used to inform better practices and policies for smallholders.

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Summary

Agriculture is the main stay for the economy of Malawi. Although the Malawian Government heavily supports the development of a modern agricultural sector, it is still dominated by smallholder subsistence farmers. This study is a literature review conducted to identify the cultural, socio-economic as well as demographic factors influencing the trend of agriculture and food security in Malawi. The study has revealed that smallholder farmers in Malawi are hampered by a number of challenges which include weak land tenure systems, poor access to farm inputs, unavailability of labor and gender inequalities, which affects sustainable and inclusive agricultural development. The repercussions of such a situation are that many smallholders are reported to be permanently food insecure and at least 40-60% of the rural households cannot produce enough to keep them for at least five months after the harvest each year. Furthermore, literature has shown that smallholder farming in Malawi is dominated by the aged people and women, whose access to agricultural inputs and resources is limited. In Malawi, the largest proportion of farmers' overall work is dedicated to maize production, although it is not cost effective to cultivate maize on small pieces of land considering the limited access to inputs. Land tenure systems in Malawi are highly unequal and insecure, contributing to high levels of rural poverty which result in poor agricultural production and hence high levels of food insecurity. The study also found that urbanization is robbing resources from the rural masses that could have contributed to improved agricultural production for the smallholder farmers. These include the loss of rural labor force, loss of agricultural land to cities, unstable family ties and poor nutrition due to low income. These factors negatively contribute to the development of agricultural production. Despite the challenges, the Malawian Government continues to promote smallholder agriculture through a number of initiatives including supportive policies and subscription to regional economic agreements. The study recommends that implementing supportive policies is imperative in order to address the challenges faced by smallholder farmers and to enhance food security in Malawi.

Keywords: Malawi, smallholder farmers, food security, culture, urbanization, land rights

Acronyms

ASWAP:	Agriculture Sector Wide Approach
CAADP:	Comprehensive Africa Agriculture Development Programme
COMESA:	Common Market for Eastern and Southern Region
AgriFoSe:	Agriculture Food Security
FAO:	Food and Agriculture Organization
FISP:	Farm Input Subsidy Programme
GBA:	Green Belt Authority
GBI:	Green Belt Initiative
GoM:	Government of Malawi
IMF:	International Monetary Fund
IFDC :	International Centre for Soil Fertility and Agricultural Development
IFAD:	International Food and Agriculture Programme
LU:	Lund University
LUANAR:	Lilongwe University of Agriculture and Natural Resources
MASIP:	Malawi Agricultural Sector Investment Plan
MDHS:	Malawi Demographic and Health Survey
MoAIWD:	Ministry of Agriculture, Irrigation and Water Development
NAIP:	National Agriculture Investment Plan
NSO:	National Statistical Office
NTB:	Non-tariff barriers
NTM:	Non-tariff measures
SDG:	Sustainable Development Goals
SADC:	Southern African Development Community
SAP:	Structural Adjustment Policy
RAP:	Regional Agricultural Policy
UNCTAD:	United Nations Conference on Trade and Development
UNDP:	United Nation Development Programme
UNECA:	United Nations Economic Commission for Africa
ASAIID:	The United States Agency for International Development
WFP:	World Food Programme

1. Introduction

Globally, food security is a major challenge as highlighted in the Sustainable Development Goals (SDGs) of the United Nations. Attaining global food security entails production of more food while at the same time efficiently using resources such as land and water. The SDGs advocate that hunger can be eradicated through advancing sustainable agriculture. Smallholder farmers, especially those in the developing countries, largely depend on agriculture for their livelihood and food security. However, socio-economic factors including those related to culture limit these smallholder farmers from achieving maximum food production through agriculture and hence they are faced with food insecurity. Achieving food security is partly about power relations and who controls food production, distribution and access (Agada and Igbokwe, 2016; Kerr, 2005).

Availability of food and access to food depends, among other factors, on the food culture and practices of an ethnic group, land tenure, access to land as well as crop choices (Agada and Igbokwe, 2016). According to Agada and Igbokwe, (2016), culture is defined as the way of life of a particular society and it refers to the roles, uses, position and symbolism of individuals, ideas and objects, including food. It includes all aspects of a society's beliefs, values, norms, taboos, institutions, language, rituals and arts. Culture prescribes the interaction between people, between people and land, and between land and food such that the culture of a place is intrinsically linked to the food consumed in the region (Agada and Igbokwe, 2016). Consequently, culture impinges on systems including access to land, division of labor, and choices of crops to grow, control of household income as well as food sharing, which all have a bearing on agricultural production and subsequently on extent of food security.

Land tenure is one of the most important components for agriculture production. The institutional arrangements under which a person gains access to land may influence the type of crops that can be grown, how long a particular piece of land can be cultivated and whether that particular land can be subjected to long-term improvements (German et al., 2009). Disputes about the division of labor among household members, on what farming practices to use, and how income should be distributed are reported as one of the major challenges experienced by smallholder agriculturalists in Sub-Saharan Africa (Kerr, 2005; Riley, 2013). Furthermore, the unequal division of labor among household members whereby household food-related responsibilities are typically regarded as a woman's domain have repercussions on food security. With regard to household food sharing, the criteria used to distribute food among the household members may contribute to the household food insecurity situation (Agada and Igbokwe, 2016). Food security is also related to ethnicity where it is disproportionately higher in minority ethnic groups in Sub-Saharan Africa. Apart from the inadequate resources to access enough food, the environments where people live and their ancestral origins influence food culture and practices with which food and food cultures may be passed on from one generation to another (Elsheikh and Barhoum, 2011). The minority status is more evident in cases of people living in urban and rural areas, in a situation where there is migration of people from rural to urban areas (Elsheikh and Barhoum, 2011).

Furthermore, the food security situation of a country can be a result of the existing global initiatives on rural development or trade. Studies have shown that degrees of capital intensity in agriculture sectors shows that agriculture is significantly more capital intensive in high-income countries than in low- and middleincome countries (FAO, 2017). Other decisions on agriculture subsidies have shown that different subsidy programmes have had in some contexts profoundly positive and in other contexts profoundly negative

impacts on food security and on the livelihoods of poor people and poor societies (Kostadinov, 2011). It is against this background that this study attempts to identify the cultural and demographic conditions for agriculture and food security in Malawi and the policies addressing these conditions. The study synthesizes existing literature based on the following questions:

- How are the existing cultural behaviors among smallholder farmers in Malawi affecting food insecurity?
- To what extent can forces between different social categories (based on, for instance ethnicity, gender, generation or political affiliation) explicitly or implicitly impact smallholder food security?
- How do the linkages between urban and rural areas such as migration and urbanization affect food security and smallholder farmers?
- How do global initiatives of rural development translate to food security in the local context of Malawian smallholder farming?

In order to address these concerns, the present study synthesized existing literature on cultural and demographic aspects in agriculture and food security in Malawi. The main focus was on land tenure, farming, labor division, household income control and food sharing, and linkages between urban and rural areas systems. The study's approach analyses the linkages between cultural aspects of the aforementioned factors (land tenure, cropping patterns, labor, household income control and food sharing) and agriculture and/or food security. Further, the study analyses the linkages between smallholder food security and 1) urban and rural areas relations and 2) global initiatives of rural development.

1.1 Characteristics of Smallholder Agriculture and Food Security in Malawi

Malawi is a small landlocked country in Southern Africa considered to be among the least developed, low-income and food-deficit countries, with the majority of the population living below the poverty line (WFP 2012; Ellis, 2003). According to National Statistical Office (NSO) (2018) Malawi has an estimated population of close to 18 million people with a population growth of approximately 2.9% (Figure 1) of which 51% are females. About one quarter of the households in Malawi are headed by women and are more common in rural areas (26%) than in urban areas (17%). The average household size in Malawi is 4.4 people. About 51% of the population are under 18 years old and live in both rural and urban areas (NSO, 2018). The poverty rate differs within the country but it is extensive and severe with around 65% living below the national poverty line and 28% in extreme poverty (IHS4, 2017; Mukhorjee, 1998). The land holding sizes for smallholder farmers are as low as 0.1 ha especially in the southern region where population is more concentrated (IHS4, 2017). This has led to encroachment of marginal land and enhanced erosion and land degradation (Josephson, Ricker-Gilbert, and Florax, 2014). These circumstances, including the high HIV incidence, make the poor extremely susceptible to food insecurity. According to statistics, close to 37% of rural households in Malawi failed to access sufficient calories between 2010 and 2011 and in the same period, 47% of children under the age of five years were reported to be stunted in their growth (Aberman et al., 2018).

Malawi's agricultural sector is characterized by a dual structure consisting of smallholder farms and estates (i.e. subsistence and commercial agriculture). The estate sub-sector was the driving force of the economy during the colonial era and up until the early 1990s. It was based on expropriation of customary lands to establish large farms. (Komarek et al., 2017). This drive targeted prime land, leaving smallholders to farm

on the marginal unproductive land. According to reports, the focus and source of economic growth during this period was commercial agriculture, led by medium-to-large scale estates (at least 100 hectares) which mainly produced tobacco, tea, and other export crops (Komarek et al., 2017). The estates were provided with preferential access to land, finance and labor. However, recent reports highlight that smallholder agriculture is the mainstay of Malawi's economy and livelihood (Komarek et al., 2017).

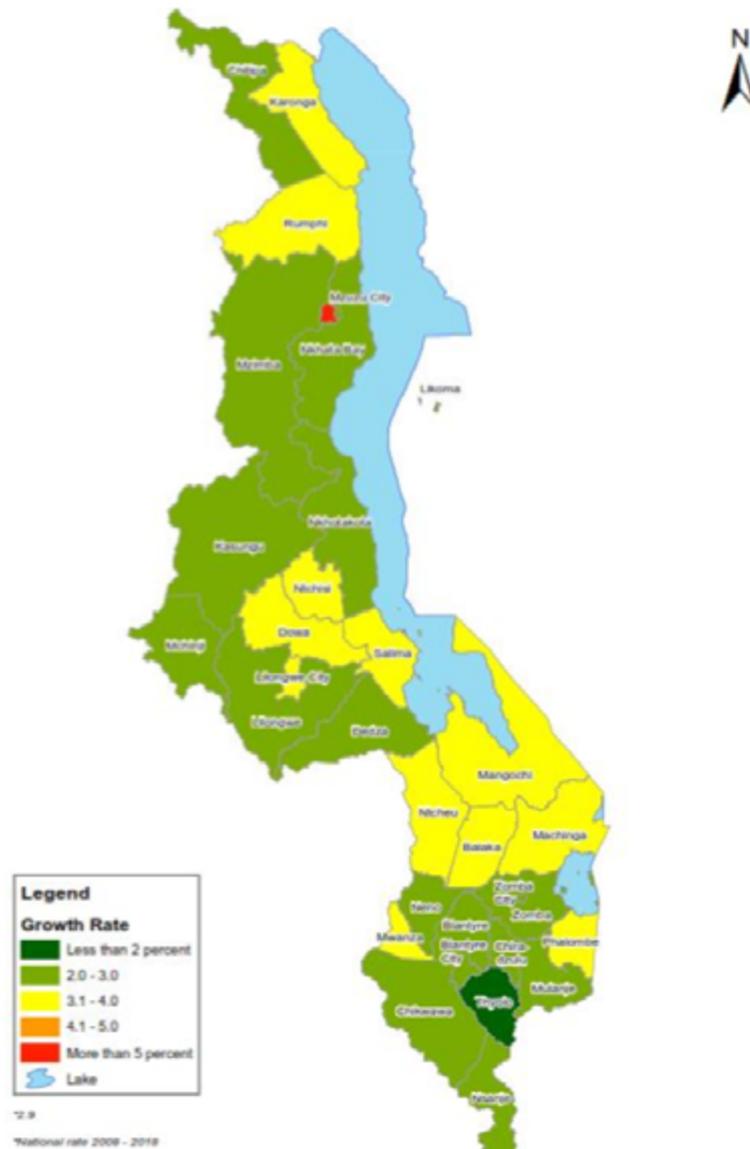


Figure 1: Map of Malawi showing population Growth Rate by District (Source NSO 2018)

The smallholder sector contributes about 70% of agricultural production. It produces an even bigger proportion of food products, while the estate sector mainly produces cash crops (Chilowa, 1998). Smallholder farming is typically done using hand hoes and oxcart ploughs, and maize is the primary crop accounting for nearly 80% of smallholder cultivated land, followed by cassava (3%) and other food crops (Kamwamba-Mtethiwa, 2016). These food crops are grown for household consumption and for sale at local and regional markets. As such, the Malawian food supply, especially in rural areas where markets are thin with few buying or selling options, is largely shaped by trends in smallholder food-crop production (Harris, Wright, and Trenchard, 2011). Malawi experienced a rapid smallholder-led growth in the agricultural sector during the last decade, largely attributed to the Farm Input Subsidy Programme (FISP); a government

programme that provides coupons to poor farmers, which they exchange for fertilizers and hybrid seeds (Jorlén, 2009; Komarek et al., 2017). In spite of this initiative, the country has seen little improvement in household food security outcomes, largely due to poor crop management and low crop yields resulting from land degradation and changes in rainfall patterns such as dry spells (Gilbert and Jumbe, 2014; Fisher et al, 2014).

1.2 Culture and Agriculture Development

Malawi is a predominantly Chichewa speaking country although English is the official language. The country has 11 major ethnic groups, namely Chewa, Nyanja, Lomwe, Sena, Tumbuka, Tonga, Ngonde, Ngoni, Yao, Europeans and Asians (mainly Indians). Europeans and Indians are present mostly in urbanized parts of Malawi. In terms of religion, 80% of Malawi's populations are Christian, of which the majority are members of independent Christian or various Protestant denominations and the remaining are Roman Catholic. Muslims constitute about 13% of the population, while other religions account for 3% and those adhering to other traditional religions make up 4% of the population (NSO, 2018). Culturally, most of the southern region and some parts of the central region of Malawi are matrilineal, while the northern region is predominately patrilineal and is dominated by Ngondes, Ngonis, Tongas, and Tumbukas. The Nyanja, Lomwe and Senas are mostly in the Southern region while the Chewas and Ngonis are in the Central region.

1.2.1 Land tenure systems

Although the Land policy of Malawi dictates and promotes equitable land distribution to all citizens of Malawi (GoM, 2012), the practice on the ground is that in Malawi, the core trait of the matrilineal system is how kinship and inheritance are handled. In matrilineal society a woman's property is inherited by her female relatives (daughters, sisters, etc.) while the man's property is inherited either by his sister or the children of his sister. It is not allowed that a son should inherit land, as he will be farming on his wife's land (Berge et al., 2014). In a patrilineal system, kinship is defined in relation to or through male relatives and inheritance of property is by male relatives. It is assumed that daughters will use land from their husbands once married, who inherit land from their parents (Berge et al, 2014). However, although only daughters are the heirs of land under matrilineal system, evidence has shown that it is the sons that use their wives' land or, in special circumstances, have temporary use of fields belonging to their female matricin (Peter, 2009). This pattern has prevailed in the face of a long and continuing history of prejudice against matriliney. Given this understanding under matrilineal system, it is not known whether the new 2016 Malawi land policy which has an explicit aim to protect and improve land rights for women will eventually have positive effects in matrilineal-matrilocal areas (Peters, 2019).

1.2.2 Cropping systems

Malawi is landlocked and the infrastructure remains relatively underdeveloped, such that importing food is difficult and costly. Approximately 2.8 million households rely on smallholder farming, who generally have only a small plot of land of less than a hectare (FAO, 2015). Because of extensive poverty many farmers do not have enough income to buy agricultural inputs. The result is that about 22% of the population in 2017 was unable to access enough food during three months of the year, while 19% had the situation for two months, and 13% had prolonged food scarcity for a period of over six months (IHS4, 2017). On average between 40 and 60% of rural households struggle to attain food for about five months each year before the harvest (NSO, 2018). The major farming activities are usually done during the rainy season which runs from November to April. In the last decade or so, irrigated farming has been promoted by the government,

although it has been done on a small scale where farmers grow vegetables, potatoes and maize (Kamwamba-Mtethiwa, 2016).

1.2.3 Labor systems

In Malawi, women carry out the majority of farming activities as production of food crops traditionally has been the domain of women. This is attributed to women's domestic responsibilities and/or social norms in communities. However, female-headed households are characterized as being poorer, owning less land and having less access to land, labor and government services, including credit, than men, which has implications on their agricultural production. For this reason, although women are largely involved in agriculture, their capabilities in agricultural production are not fully exploited due the challenges encountered (FAO 2011).

1.2.4 Control of household income

In Malawi, intra-household decision-making and resource allocation processes play a major role in agricultural production. Men usually have more control over household assets giving them a greater influence over household decisions, although this varies with time and place and even between the households. This is the common behavior in both patrilineal as well as matrilineal systems. The implications of men's dominion of household decision-making can be different depending on the household, but several empirical studies have noted that when additional resources are put in the hands of women, they are more likely to be used for food and other investments in the welfare of household members (Chindime and Ubomba-Jaswa, 2007). For instance, maize is the primary staple crop in Malawi which makes up over half of the total energy in the diet. However, the decision whether to invest in maize or cash crops is largely vested in the hands of a head of the household and these are usually men (Minot, 2010).

1.2.5 Household food sharing

The typical Malawian meal consists of a starchy staple meal (nsima) and a relish (ndiwo), which may either be meat and/or vegetables and/or beans (Mandala, 2005; Babu, 1994). The actual foods that make up these two components can be adapted to what is available, but they are both essential to make a whole meal. Maize (Chimanga) is the overwhelmingly preferred ingredient for 'nsima' in Malawi to the extent that several transcripts suggest a conceptual conflation of "maize" and "food" (Riley, 2013). The widespread consumption of maize, vegetables and dried fish is partly based on the more affordable options. Maize is high-yielding under optimal conditions but requires more nutrients for growth compared to other staple crops such as cassava and sweet potatoes, and does not perform well in nutrient or water-limited environments (Lunduka, 2012). When it comes to household food sharing, men are traditionally prioritized followed by children in most of the ethnic groups in Malawi (FAO 2011). The implication of the dominance of maize in most Malawians diets is that there are reports of high incidences of malnutrition among children due to the unbalanced diets (WFP, 2012). In addition, the practice of prioritizing men in household food sharing exposes women and children to food insecurity challenges (FAO 2011).

2. Research Methodology

The review employs qualitative and descriptive techniques to synthesize existing research on cultural and demographic conditions for agriculture and food security in Malawi. An integrated literature search, comprising traditional and systematic literature search and review approaches, was used in this study. The literature search was conducted on various databases and relevant peer review journals, whilst a traditional literature search collected information from different institutions, Google scholar, bibliographies of identified papers and grey literature. Institutions that were consulted in Malawi included the Ministry of Agriculture, National Statistical Office (NSO) and various individuals representing the Ministry of Agriculture, Irrigation and Water Development (MoAIWD).

2.1 Screening of relevant articles and analysis

Inclusion and exclusion criteria were used to select articles to include in the review ranged from dates, languages, titles and content. The search included articles written in English between 1995 and 2018. Studies conducted either in Malawi or within the Malawi region, or with international coverage but that had relevant information to this review, were selected. To identify relevant studies, text strings 'Food security/* Malawi/ gender/urbanization/ social economic agriculture, food security, policies, youths and women or Malawi' were used.

3. Results and Discussions

3.1 Underlying cultural mechanisms in smallholder agriculture in Malawi, and how they contribute to food insecurity

Culture is a dominant factor determining household food choices, number of meals consumed per day, agricultural decision making, cropping system, division of labor, land acquisition, control over household income, preference in household, food sharing and hence food security. In view of this description, this section outlines how cultural factors affect food security in different households in Malawi.

3.1.1 Land tenure systems and its impact on food insecurity

In Malawi and amongst rural masses, access to land is generally regarded as key for sustainable livelihoods, however, land ownership is highly unequal (Josephson et al., 2014). The existing land tenure system and pattern of land use is partly as a result of ancestors' customs, human settlement patterns and demographic processes as well as agro-ecological factors. These are further modified by legal and economic influences of the colonial era, and previous policies on land utilization (Josephson et al., 2014). Land laws in Malawi have remained unchanged apart from minor amendments, since independence, which means that the current land policy is very similar to the policy under colonial rule (Gondwe, 2002). A new land policy was developed and endorsed in 2002, however, the legislative framework needed to implement the law was still not in place (Peters and Kambewa, 2007). For example, the new land policy designates a new category of land called private customary land, which has not been implemented in the absence of an enabling legislative framework. Thus, in the absence of a new legislative framework, customary land that most smallholders in Malawi farm, is treated as state owned (Land Act, 1967).

Presently, more than 70% (about 4.0 million hectares of land) of smallholder land remains 'customary' land where allocation rights are granted to farmers by local chiefs (FAO, 2015). Smallholders have limited ability

to hold land in title, neither to buy nor sell or rent land. This lack of land tenure security contributes to high levels of rural poverty, which result in poor agricultural production and hence high levels of food insecurity. Land is a significant determinant of whether a household will be food secure, less vulnerable to risks and shocks, and be able to earn a living above the poverty line in Malawi. Since Malawi is highly dependent on the agricultural sector for its overall economic growth, access to land and land tenure security is critical (Chinsinga, 2012). In Malawi, it is estimated that 55% of smallholder farmers have less than 1ha of land out of which 70% is devoted to maize cultivation which is their staple food (Chinsinga, 2009; Chirwa et al., 2008). On the other hand, estates on average cultivate between 100 to 500 hectares and in total there is more than 30,000 ha being owned by estates alone. The land tenure systems in Malawi can only be improved if the land reform legislation is enacted which will empower smallholder farmers to use the land for security purposes such as obtaining credits in order to boost their agricultural production (UNECA, 2009).

According to IHS4 (2017) report, the average cultivated area per household in Malawi is about 1.5 acres and on average, male-headed households cultivate 1.7 acres compared to female-headed households who cultivate 1.2 acres. About 46% of households cultivate less than 1 acre (<0.5 ha) (IHS4, 2017). The proportion of female-headed households cultivating less than an acre of land is higher (57%) than their male counterparts, (41%). On the other hand, the proportion of male-headed agricultural households that cultivate more than one but less than two acres of land is higher (32%) than the female-headed households (29%) (IHS4, 2017).

The above understanding suggests that smallholder landholding in Malawi is fragmented, insecure and the institutional lineage arrangements (matrilineal or patrilineal) under which smallholders gain access to land influences the type of crops to be grown, the length of time (years) the land that can be cultivated and possible long-term land improvement measures. This land tenure insecurity for rural farmers contributes to high levels of rural poverty as a result of low and unsteady sources of livelihood, which may also result in poor agricultural investments, such as low use of agricultural inputs and soil management, leading to low agricultural productivity and hence high levels of food insecurity. Moreover, there are fears that the new 2016 land policy which includes an explicit aim to protect and improve land rights for women is likely to have opposite effects in matrilineal-matrilocal areas since evidence has shown that it is the sons who eventually use the wives' land.

3.1.2 Farming systems and its impact on food insecurity

In Malawi a good proportion of smallholder farmers either grow maize, legumes, own livestock or work offfarm as a livelihood strategy. As can be seen in Figure 2, maize production dominates most smallholder farmers' on-farm work as it is the most important food item. Close to 80% of all cultivated land is planted with maize, mostly by resource-poor smallholder farmers especially the female-headed household (NSO, 2018 and IHS4, 2017). In addition, women tend to diversify their cropping system to growing more legumes. In a study of recipients of the free inputs in the 1999/2000 season, 96% reported that maize was the staple food for the household, while cassava was the staple food only for 3% and rice for 0.5% of the sampled households (NSO 2018). Although literature has shown that it is not efficient for farmers to cultivate maize on small pieces of land, farmers continue to do so and this results in low maize productivity. This is reinforced by high input prices and inter-year maize price instability. The fear of low maize prices does not make it attractive for potential maize surplus producers to invest in maize production, while the fear of high maize prices forces maize deficit farmers to grow as much maize as they can on their small pieces of land even though they cannot afford high-yielding seeds and fertilizer. Malawians consume annually over 150

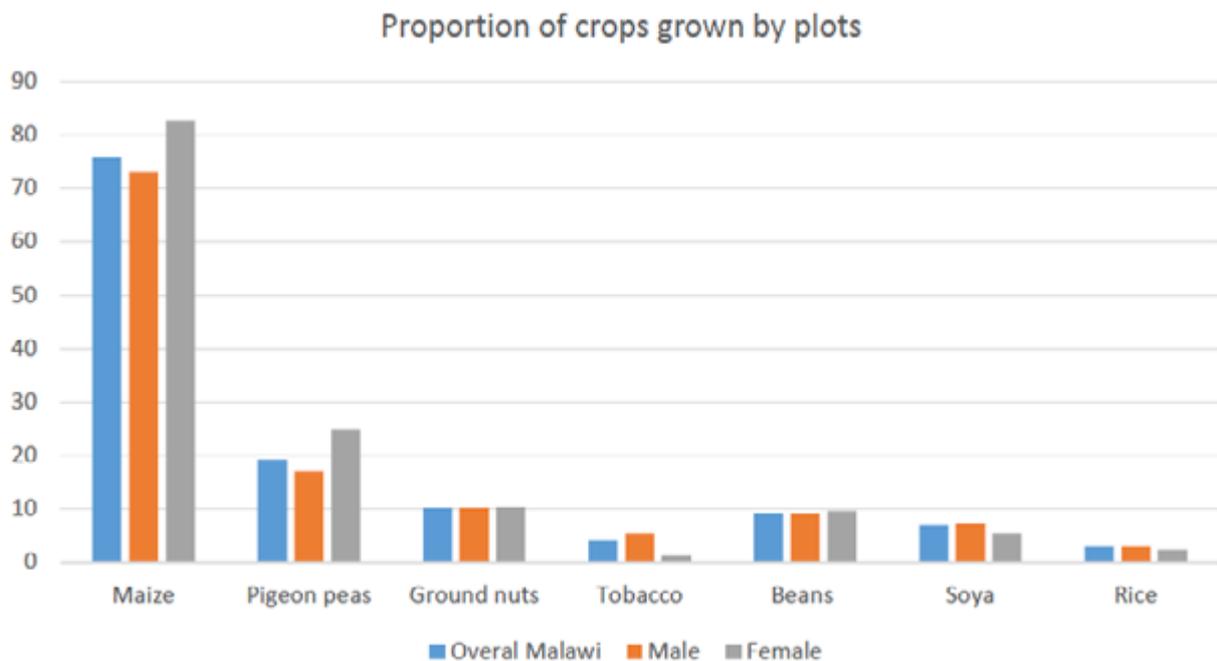


Figure 2: Proportion of crops plots by type of crop in Malawi (Source IHS4, 2017)

kg maize per person, which constitutes more than two-thirds of their caloric consumption, the largest per capita consumption of maize in the world (Gilbert, Sakala, and Benson, 2002). According to Tchale (2009), there are important cultural and historical reasons why maize has become such a dominant crop for Malawian smallholder farmers and these include the long-standing food security policies that emphasized the importance of cultivating maize as the staple food crop, and the fact that maize grain can be stored more easily than other foods, given limited household-scale technologies. Since the majority of Malawians have maize as their staple food, food security at the national level has been equated to the production levels of maize (Chilowa, 1998). Therefore, all efforts in increasing food production have gone towards the promotion of increased maize production (Chirwa, 2014). Agriculture policy instruments have tended to focus on either one of the two most dominant crops: maize for food or tobacco for export (Chinsinga, 2012). At the global level, this has left the country vulnerable to price fluctuations. At the farm level, the lack of crop diversification has kept malnutrition high. In 2015 an estimated 2.8 million people (17% of the population) were in need of food aid yet, just a few years ago, Malawi was hailed as a smallholder champion, with its far-reaching fertilizer subsidy regarded a huge success, locally and internationally (USAID, 2008). The subsidy programme may have contributed to significant agricultural growth between 2004 and 2009 but it appeared to have been less successful in steering the country out of the 'low maize productivity trap' (Chinsinga, 2012). On the other hand, although maize meal is taken together with a side dish like beans, pulses, vegetables and livestock products, these seldomly and rarely come into the discussions on food security in Malawi (Chilowa, 1998). While the focus on improving smallholder productivity in Malawi has only moderately improved food security and nutrition outcomes evidence suggests that about 37% of rural Malawian households failed to access sufficient calories between 2010 and 2011 (Aberman, 2018). These indicators imply that some Malawian diets are lacking in terms of quantity (total calories consumed), and most are lacking in terms of quality. It is suggested that good nutrition requires both enough total calories (quantity) and enough vitamins and minerals per calorie (quality).

There is strong evidence of the positive association between maize yield and fertilizer applied in Malawi (Komarek et al., 2017; Lunduka, et. al., 2012). Scholars also suggest that there is a decline of soil organic matter as soils are continuously cropped with maize (Gilbert and Jumbe, 2014). Moreover, continued cultivation on the same piece of land entails unrelenting plant nutrient uptake and hence exhaustion of the soil. Continued cultivation increases the threat of the crop being attacked by diseases and plagues. According to Gilbert et al, (2002), the mean organic carbon in three regions of the country has declined between 0-31% over a 20-year period. Furthermore, with little resilience to climatic, economic and social shocks, households have become extremely vulnerable to food insecurity. It is also claimed that the dominance of maize in the weaning diet is one of the factors that contributes to the high proportion of children who are severely stunted. Child malnutrition rates in Malawi have been high (almost 50% stunting) for the past two decades and are attributed to multiple causes, including low dietary diversity, high rates of poverty and unequal status of women (MDHS, 2001, Gunda, 2007 and Mukhorjee, 1998).

The fact that farmers, with limited resource, in densely populated areas seem to be focusing resources on maize cultivation to ensure their own food security is unsustainable, given population growth, shrinking farm sizes, and declining soil fertility. There is a need for policies that facilitate credit access, improve transportation, and develop markets for high value products, to increase farm income per hectare. Finally, in order to enhance farming systems and improve food security in Malawi there is need to improve maize production and explore options that can increase the diversity of household livelihood strategies, from an economic perspective, by improving legume and livestock productivity and better off-farm opportunities.

One way of achieving this, is through lowering open-market fertilizer prices and targeting the smallholder farmers and this may likely benefit smallholder farmers. Evidence suggests that reduction of fertilizer prices can lead to an increased use of nitrogen fertilizer at household level which eventually may increase household yields and consequently income by over 50% (Komarek et al., 2017). Additionally, formulating specific policies that increase smallholders' ability to produce legumes and livestock production can be other options for improving households' livelihood strategies (Lunduka, Fisher and Snapp, 2012). This can further be supported by policies that can increase action on diversity on household diets to reduce the dominance of the consumption of maize. Farmers should be encouraged to produce and consume food of increased quality and diversity for improved nutrition and food security (Sibuhatu et al., 2015). Although, evidence suggests that in Malawi, the role of production diversity is more important in remoter regions where farms tend to be more subsistence-oriented, and where higher farm production diversity significantly contributes to dietary diversity in some situations FAO (2015). At the same time, there are strong arguments that access to markets has positive effects on dietary diversity; these tend to be larger than those of increased production diversity (Sibuhatu et al., 2015). Access to markets thus tends to reduce the role of farm diversity for household nutrition suggesting that increasing on-farm diversity is not always the most effective way to improve dietary diversity in smallholder households and should not be considered as the only option (Sibuhatu et al., 2015; Fisher et al., 2015). An alternative effective strategy will be to improve small farmers' access to markets in order to improve nutrition in addition to promoting production diversity on subsistence farms.

3.1.3 Labor division systems and their impact on food insecurity

Labor is a key asset for smallholder farmers in rural Malawi. The quality and quantity of labor available to the household with regard to numbers, educational level, skills, and health constitute the human capital that is the basis for constructing household livelihood strategies. In the context of Malawi's smallholder production, where farm mechanization is virtually non-existent and all farm work is done manually, having

access to labor for agricultural production directly affects the levels of household food security and farm income. The types of labor used in agricultural production in Malawi can be classified into two categories, family labor and hired labor. Out of these, family labor is the main source of labor among many smallholder farmers and it accounts for over 70% of the labor input (Takane, 2008). In their study, Takane, (2008) revealed that insufficient family labor, coupled with financial constraints, means that poor households, e.g. female headed households, may not be able to hire in agricultural labor, and thus depend on family labor. In addition to working on a household's own farm, labor may also be deployed in off farm economic activities, thus providing additional income to the household.

The importance of family labor in farm work and the lack of mechanization of agricultural production entails that the availability of family labor is a pre-requisite for smallholders to increase farm size. However, the increase in farm size using abundant family labor is possible only under the condition that land is readily available. This is not always the case in most of rural Malawi today, because increasing population pressure on the land has considerably reduced the scope for farm expansion onto uncultivated land (World Bank, 2011). Furthermore, the use of family labor reflects the subsistence nature of the farming system, which is mainly for family survival. Evidence suggests that households that solely depends on family labor face labor shortages, while those that supplement family labor with hired labor reduced labor constraints and hence are able to invest in cash crop farming such as tobacco (Chanza-Chonde, 2011). Other studies have argued that there is a causal link between financial constraints and labor availability, and that in Malawi labor is the only asset that can be converted into cash (Alwang and Siegel, 1999). Given the availability of household labor and presence of financial resources, it is argued that improved tenure security will lead to higher investments and agricultural production (Kessie, 2015).

In the case of hired labor, this is further classified into seasonal labor and casual labor. In seasonal labor contracts, laborers are employed for several months in the rainy season, which runs from November to April every year. According to Takane (2008), many of the employers of seasonal labor are wealthy farmers who mostly grow cash crops such as tobacco. Casual labor (ganyu) is widely used for various farm tasks in Malawi (Takane, 2008). In this case, wages are paid upon completion of a specific task, such as weeding. Some literature suggests that the engagement of poor households into casual labor results into food insecurity situations for those households. For example, a longitudinal study of seven villages in Southern Malawi from 1988 to 1999 argued that the poorest households relied heavily on casual labor as a source of food and income, and the trend had been increasing over the years (Takane, 2008). The study observed that poor households ran out of food during the rainy season and tended to focus on casual labor to gain access to food during the time when labor is critically required at their own farms. This may result in a smaller harvest, and can lock some households into a vicious cycle of food insecurity (Takane, 2008). The situation is often made worse by the unequal status of women with regard to their high workloads since apart from providing labor for agriculture also have to pay attention to reproductive labor such as caring for young children (Bryceson, 2006). These findings suggest that casual work is both a livelihood strategy as well as a factor that contributes to reduced household food production for poor households' thereby increasing vulnerability to food insecurity as families would prioritize income from casual labor than working in their own gardens (Bryceson, 2006). The above analysis demonstrates the link that exists between labor and food security in Malawi. For this reason, it would be important for policies to focus on strategies that promote income diversification without reinforcing damaging structures that keep poor household's poor.

3.1.4 Control over household income and its impact on food insecurity

The majority of Malawian households are headed by men and it is the men that usually have control over household income. This is despite the fact that women contribute about 70% of agricultural labor, 50% of animal husbandry related activities and 60% of food processing activities (NSO, 2018). In Malawi, evidence indicates that food security is influenced by the interaction of income and gender of the head of household (Kerr, 2005; Kennedy and Peters, 1992). Not only is household food security influenced by total household income but the proportion of income controlled by women has a positive and significant influence on household caloric intake (Kennedy and Peters, 1992). While many female headed households are poorer than their male headed counterparts, when empowered, household food security and the nutritional status of individual household members is significantly better in households headed by women (Chindime and Ubomba-Jaswa, 2007). A number of studies have found that women tend to spend a greater proportion of their incomes on food compared to men (Kerr, 2005; Kennedy and Peters, 1992). On the other hand, there are claims that female-headed households are generally poorer, own less land and have less access to land, labor and government services, including credit suggesting that although they have a potential to improve household caloric intake, they are challenged with their attributes (Kerr, 2005). Studies have also indicated that male-headed households spend proportionately less on food and have higher levels of expenditure especially on non-food items (Chindime and Ubomba-Jaswa, 2007).

3.1.5 Household food sharing systems and its impact on food insecurity

Studies have shown that inequalities in food distribution within families in many countries have favored men over women (Figure 3), among other variables (Agada and Igbokwe, 2016). In Malawi, the general practice in household food sharing is for husbands to be served first (den Hartog et al., 2006). This according to den Hartog et al., (2006) is perceived that giving priority to husbands/adult males in household food distribution increases the probability of household food security. This could also be an indication of the traditional division of labor in agricultural activities where males are considered to undertake heavy tasks compared to females. Thus, it is perceived traditionally that males require more food in order to produce enough food for household consumption and for enhanced income, which could be used for purchases during food shortages (Agada and Igbokwe, 2016). However, this approach has the probability of threatening the nutritional wellbeing of the vulnerable members of the family such as women and children (den Hartog et al., 2006). Giving priority to the head of the family and the income-earning members of the household in eating may result in mothers and young children receiving a smaller share of the family’s food relative to their nutritional needs even though a household may have enough food (den Hartog et al., 2006).

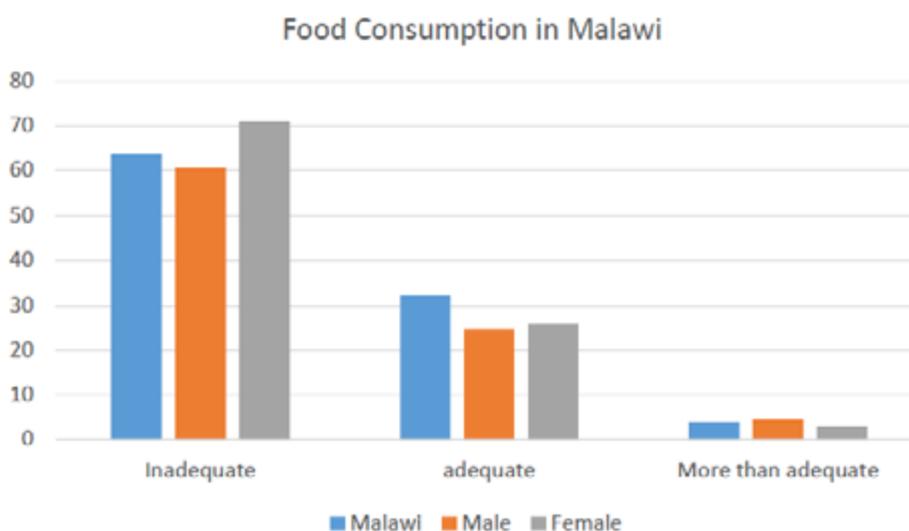


Figure 2: Proportion of crops plots by type of crop in Malawi (Source IHS4, 2017)

3.1.6 Gender and its impact on food insecurity in smallholder farming

In sub-Saharan Africa one of the key reasons for underperformance in the agriculture sector is the large gender inequalities in access to and control over resources and opportunities which undermine sustainable and inclusive agricultural development (Djurfeldt et al., 2018; FAO, 2011). The inequalities relate to access to many assets including inputs and services, such as land, livestock, labor, education, extension, financing and technology. This imposes actual costs on the agriculture sector, limits its efficiency, and includes costs for the broader economy and society (FAO, 2011). A change in the distribution of inputs and/or control over resources between female and male farmers can not only significantly increase productivity, food and nutrition security, but also positively affect education outcomes (Beuchelt, 2016; Meinzen-Dick et al., 2011; World Bank, 2009). The FAO (2011) estimates that if women had the same access to productive resources as men, total agricultural output could be raised in developing countries, which, in turn, could reduce the number of hungry people in the world by 12–17%.

In Malawi, women provide 70% of the labor force in agriculture whilst young people aged below 18 years make up a majority (51%) of the population (NSO, 2018). Despite these important statistics, these categories of people (women and young people) still remain the most marginalized and less included in strategic decisions critical for economic growth including agriculture in Malawi. Women in Malawi are characterized by high illiteracy rates, hence exposed to low paying jobs, limited access and control of agricultural resources, modern technology, and access to structured markets all being serious constraints limiting women's productivity (NSO, 2018). Coincidentally the youth face the same predicament and their potential is not fully exploited (NSO, 2018; Miller et al., 2011). For these reasons a higher proportion of women and youths are the people that are mostly affected with food insecurity in Malawi.

In Malawi agriculture remains the mainstay of the economy and it is critical to understand the extent and sources of gender productivity gaps in order to develop the policy interventions that empower both men and women. Chilowa et al, (1998) categorized the type of smallholder agricultural farmers in Malawi into three groups: net food sellers, intermediate farmers and net food buyers. The net food sellers are those with land holding of more than 1.5 ha and they produce more than their subsistence needs. The intermediate farmers are those with land holdings of between 0.7 and 1.5 ha and they produce just enough for their survival but have very little for sale. The net food buyers are those smallholder farmers with land holdings of less than 0.7 ha and are not able to produce enough food for their subsistence needs (Chilowa et al., 1998). It is estimated that between 40 and 55% of the smallholder farmers are net food buyers and these are mostly women farmers. Despite women being highly involved in agriculture in Malawi, their contributions tend to be undervalued and neglected when it comes to new interventions. These genderbased differences also concern economic capacities and incentives, which in turn undermine the potential for women to contribute effectively to agriculture productivity (Mudege, 2017, Chinsinga, 2012).

Women and youth therefore need to be fully embraced in order to increase productivity. One way of doing this is to develop clear strategies that will facilitate women and youth access to key production inputs such as land, modern technology including research and technology, mechanization, competitively priced finance and access to structured markets among others (Kessie et al., 2015). For instance, policies that ensure that modern farm technologies (such as seeds and fertilizers) are accessible to women farmers can play a big role in reducing the gender gaps. In a related study, Fisher and Kondiwa (2014) found that the Malawi's Farm Input Subsidy Programme (FISP) has a positive impact on gender gaps in adoption of modern maize in Malawi. The study observed that the adoption to modern maize cultivation had increased

by over 200% for female household heads as a result of receiving both seed and fertilizer subsidies. Furthermore, interventions that are specifically targeted to female heads of household are important to completely eliminate the gender gaps and ensuring women's access to modern technologies. These findings seem to suggest that gender gaps in agriculture production and food security may be reduced through interventions that aim at reducing the limitations that women farmers face in Malawi.

3.2 To what extent do tensions between different social categories impact smallholder farming?

Social diversity refers to differences between categories of people in their access to and control over livelihood assets, relative wealth, livelihood security, social status, a sense of belonging to different social groups and cultural norms and beliefs (FAO, 2011). In Malawi, people can be socially categorized based on age, gender, education and poverty levels. The subsequent section describes how age differences, literacy and poverty levels impact smallholder farming in Malawi (FAO, 2011).

3.2.1 Impacts of age differences on smallholder farming

In Malawi, smallholder farming is practiced by different age groups including both young people and adults. According to the literature, (NSO, 2018), the agriculture sector is dominated by those aged 35 years and above, and especially by women. Most youths in the country do not aspire for farming as a career due to its poor profitability and low professional status, as smallholder agriculture is associated with poverty (Chinsinga, 2012). Youths strongly feel that investing in agriculture cannot make them realize their vision of having a better life. They argue that life in farming is not only demanding, but also a huge gamble in view of the challenges facing the sector. This has resulted in many youths abandoning the agricultural sector for other forms of employment (GoM, 2017). The above understanding suggests that one of the biggest challenges for the agricultural sector in Malawi is to retain young people in agriculture.

There are also difficulties with regards to access to land, credits and inputs for agricultural production in order to attract the youths to smallholder farming (Kerr, 2005). For instance, under matrilineal systems, where land is inherited through female children, the male youths have limited access to land as they only depend on the land of the wife once married. As such in the absence of marriage, many of them resolve to migrate to the urban areas in search for jobs. On the other hand, the patrilineal system that provides less openings for female youths to access land and hence less control over agricultural farming activities renders farming unattractive for women (Kerr, 2005). Furthermore, there are strong arguments that there is limited commitment/investment in land that is accessed through marriages as there are fears of divorce at any time which may render them landless. The situation is made worse with the increasing fragmentation of land due to population growth. Already small pieces of land are further sub-divided among to the point that the benefits realized from farming are insignificant and hence rendering farming to be less and less attracting to youths (Kerr, 2005). At the same time, it is often argued that older farmers are less likely to grow modern varieties than younger farmers, which would support the previous evidence that younger people are more innovative than the aged (Tuong, 2000). This may suggest that the rate of adoption for agriculture technologies will be slower if the youths, who are mostly innovative, leave the agriculture sector.

It is important that farming becomes both intellectually stimulating and economically rewarding, in order to attract or retain rural youth in farming (Swaminathan, 2010). The nature of agricultural farming needs to change in order to reduce the mass withdrawal of young and educated people from the agricultural sector. Such changes may include reducing the intensive labor demand in agriculture through technology change.

3.2.2 Impacts of education on smallholder farming

In Malawi, education is considered as one of the most important indicators for measuring household's vulnerability (Mutisya, 2016). Educated individuals are quicker and more efficient when it comes to process information about new technologies (Kamwamba-Mtethiwa, 2012). For example, Foster and Rosenzweig (2010) found that farm plot managers with a primary school education or higher were more likely to grow modern maize than less-educated farmers. Women in Malawi are characterized by high illiteracy rates, (literacy for reading and writing in any language is 81% percent for males and 66% for females for 15 years of age and above), limited access and control of agricultural resources, including modern technology, as well as poor access to structured markets and having low paying jobs (IHS4, 2017; Foster and Rosenzweig, 2010). However, promotion of agriculture technologies often does not take into consideration these gender disparities and education differences among the smallholder farmers. This is despite the fact that an increased income controlled by women probably would have a greater positive effect on calorie intake, nutrition, health, and educational attainment among household members than a similar increase of men's income (Quisumbing et al., 2010; Fisher and Kondiwa, 2014).

The above findings suggest that in Malawi low literacy rates hinders smallholder farmers from fully participating in farming and hence challenged with food insecurity. The situation particularly affects women who usually have a higher illiteracy rate (Mutisya, 2016). It is therefore important that all agricultural interventions should take into consideration the differences in literacy levels among smallholder farmers and make deliberate efforts to reach out the illiterate farmers. For example, using special training techniques or extension services for illiterate smallholder farmers, such as using visual aids, would be important in promoting agricultural technologies. Smallholder farming can also be improved by strategic policies that aim at improving school attainment such as free education and a conducive environment that promote girl education. This can be supported by Mukherjee and Benson, (1998) who indicated that measures such as improving education increases women's influence within the household are also associated with better outcomes for children. It is argued that empowering women is a well-proven strategy for improving household welfare especially the children's wellbeing. Mukherjee and Benson (1998) argued that higher levels of educational attainment, especially for girls and women, are likely to prove effective in reducing poverty in Malawi.

3.2.3 Impacts of poverty on smallholder farming

Generally, the performance of the agricultural sector in Malawi has been low, in spite of the many policy reforms that have been implemented in the sector (Chirwa et al., 2008). In an official document on agricultural policy, the Government of Malawi (GoM) (2011) notes that agriculture in Malawi is characterized by low and stagnant yields, over-dependence on rain-fed farming, low level of irrigation development, and low adoption of improved farm inputs, which all increase vulnerability to weather related and other shocks. In addition, there is low profitability of smallholder agriculture, which has been influenced by weak links to markets, high transport costs, few farmer organizations, poor quality control and lack of market information. The interplay of these various factors has negatively affected agricultural development and growth, with implications on the contribution of agriculture towards poverty reduction (IMF, 2017; Haile, 2017).

The poor performance of the agricultural sector in Malawi is partly attributed to the low growth rates in productivity. The promotion of smallholder agriculture has been on customary land, i.e. land in which rights to cultivate and transfer land are conferred by traditional chiefs. With a growing population, customary land has become more fragmented (Table 1) and the landholding sizes have declined over time (Holden, 2017).

Diminishing land sizes have implications for technology adoption and farm mechanization. There have been several government efforts promoting the adoption of fertilizers, hybrid seeds and modern methods of farming, and the provision of price incentives through progressive market reforms, but due to diminishing landholdings the supply response has remained weak.

Table 1: Cultivated Plot Sizes in Malawi (Source IHS4, 2017)

Category	Characteristics	Size of Plots (acres)					
		Average area (acres)	0-1	1-2	2-4	2-4	6+
Sex	Malawi	1.5	45.8	31.5	17.6	3.5	1.7
	Male	1.7	40.7	32.4	20.3	4.3	2.3
	Female	1.2	57	29.4	11.6	1.5	0.5
Age	15 -24	1.7	40.7	32.4	20.3	4.3	2.3
	25-34	1.3	52.8	29	14.5	2.8	0.9
	35-49	1.6	41.4	32.4	20.9	3.3	1.9
	50-64	1.8	36.5	33.7	21.2	5.8	2.8
	65+	1.6	42.9	42.9	49.9	42.9	2.0

There is a need for state intervention in the agricultural sector in order to change the subsistent nature of production to commercial production. This will require a long period of stable low prices for maize, the main staple crop; hence, lower maize price/cash crop price ratios. The low maize prices will encourage subsistence farmers to switch to cash crops (Chirwa, 2011). The current agricultural input subsidy, if continued in the medium term, will lead to an excess supply of maize and lower prices, providing incentives for smallholder farmers to switch from subsistence farming to commercial farming. There is also a need for revitalization of extension services to go hand in hand with the agricultural input subsidy programme (Chirwa, 2011).

3.3 How do relations between urban and rural areas affect food security and smallholder farmers?

A majority of rural residents and quite a few urban residents engage in agriculture to some extent (Kerr. et al., 2013; Satterthwaite et. al., 2010). As already mentioned, the vast majority of smallholder farmers have landholdings of less than one hectare. This means that many rural households have to engage in non-farm activities to make ends meet, and as rural households increasingly engage in non-farming activities, the proportion of total household income derived from these activities also rises (Carletto et al., 2013). Thus, it is claimed, falling farm income leads to greater non-farm earnings, among both urban and rural households (Ajaero and Onokala, 2013). Migration has also been identified as a survival strategy utilized by the poor, especially for rural inhabitants who benefit more than the urban dwellers. Migration acts as a catalyst in the transformation process of the rural society and the remittances become critical resources for the

sustenance strategies of receiving households (Byerlee, 2016). These are used to meet the cost of food, clothing as well as investments in children's education, health care, improvement in household food and security, and water and sanitation (Golden, 2013). Nevertheless, the ability of remittances to compensate the labor and other shortage in rural areas is a function of the amounts and value of remittances received by migrants' households at home (Ajaero and Onokala, 2013).

3.3.1 Change in food prices

Urban expansion inevitably covers some agricultural land. Estimates of Malawi's urbanization rate have indeed been on the high side. Some present Malawi as "one of the fastest urbanizing countries", projecting that its urban population grows at the rate of 4.7%, with a potential warning of the urbanization of poverty and growth of slums (World Bank, 2016). An immediate consequence is the crowding out of peri-urban agriculture, which often plays a significant role in supplying perishable foodstuffs to cities (Mkwambisi, 2011). In addition, already weak tenure agreements may be challenged; and agricultural production may shift to less productive areas, which could, result in yield losses (FAO, 2011). Land-use changes due to city expansions can also imply irreversible losses in biodiversity (Byerlee, 2016).

High population in urban areas means high food demand and yet land meant for agriculture production is changed to infrastructure development. In absence of increasing yields and low-cost imports less land allocated to agriculture tends to increased food prices (Whiten et al., 2011; Golden, 2013). In anticipation for profitability of the land, land around cities is left vacant as the owners wait to make the gains from either selling it or using it for non-agricultural uses or agricultural purposes (World Bank, 2016). Generally, urbanization, which is associated with higher incomes, contributes to significant shifts in global food demand patterns (Byerlee, 2016). This is because urban residents generally have higher incomes and therefore have greater disposable income available for food than the rural population. This in turn has led to dramatic changes in food supply chains. Consumers, particularly in urban areas, prefer greater variety, better quality, and more of animal-origin and processed foods (Satterthwaite et. al. 2010). The presence of such demands leads to increased food production in the surrounding rural areas in reaction to the increasing demand. In urban areas, there is also a growing drive to consume food away from home. This has added to the increased food demand. In Malawi, urbanization has indirectly contributed to increased food prices over the past years (Stage et al., 2011). In the absence of good supply of the food coupled with high demand, the food prices escalate in anticipation for the profitability of the land.

3.3.2 Household restructuring

Generally, urbanization and industrialization, has brought about transition from multigenerational families to nuclear families (Byerlee, 2016). Pre-urban societies are characterized by extended families and close social and economic relations. Strong common religious and cultural bonds, including customs and habits, are common in village settings. Besides that, strong solidarity in pre-urban societies were essential for survival. Urban societies are, by contrast, characterized by nuclear families and weakened kinship ties. This is due in part to the increase in the physical distance among kin members as a result of migration, and economic needs that preoccupy the needs of the households (Byerlee, 2016; Rigg, 1998). In many countries, Malawi inclusive, the amount of young people migrating on their own has increased dramatically in recent years. The 2016/17 integrated household survey in Malawi showed that among migrants from rural to urban areas, 52% moved due to family reasons and 9% moved to start a business or to work. Adolescents as young as fourteen are moving alone from rural areas to urban centres, often as part of a family strategy to diversify income sources. Young people move to seek education or jobs: boys typically find work in construction, while girls tend to work in domestic service (IHS4, 2017). In many cases,

young people also move to escape oppressive family relationships (Byerlee, 2016). The migration of youth to urban areas leaves the aged and less productive in rural areas, resulting in low agricultural production hence food insecurity and use of old agricultural methodologies. Other studies have shown that urban centres increasingly attract women because they offer more economic opportunities than rural areas (Mylott, 2009; Byerlee, 2016) This is reflected in changing urban sex ratios (the rate of males to females in a population): the proportion of women living in urban areas has risen steadily in most parts of the world. Being alone in the city obviously increases vulnerability, especially for young women. This is exacerbated by low incomes and high living costs, which is a major constraint when it comes to accessing health services and getting safe and adequate housing (World Bank, 2011). Despite this, young migrants still tend to contribute financially to their parental home, as this is often the only way to ensure that they are still considered part of the family and the safety net it can provide.

Another effect of urbanization is about family breakages leading to an increase of female headed families. This is because men usually migrate to cities to pursue a better life. In some cases they end up getting married to some other women in the city leaving their wives and children in the rural areas (Chilimampungu, 2006). The result of this is that the social and economic status of the affected families is reduced when for example children end up not being educated or female children get married before adulthood, leading to abject poverty in the families (Cheng Sim, 2003). Policies that promote rural development and create job opportunities can help to reduce the migration of men and youths to urban areas. This will in turn help to support the education of children and avoid underage marriages. Furthermore, inclusive policies for accessing education are the possible alternatives for reaching out the households that are restructured because of urbanization. In addition, targeting poor women with extension and development project support; and supporting the wealthier farmers to increase the employment opportunities associated with urban agriculture would be possible alternatives to deal with the effects of urbanization.

3.3.3 Land demand and allocation

Studies have shown that approximately 25% of the world's land area is used for agricultural purposes (Cassman et al., 2005). Urban growth is more likely to reduce arable land availability if growth expands. Often in urbanization, forests are cleared, razed, wetlands drained and croplands encroached upon under the influence of urbanization. But an analysis have shown that it's only about 1% of agricultural land that is lost to urban development in most countries, Malawi inclusive (Schneider et al. 2009) Moreover it is argued that a declining proportion of land used for agriculture around the urban areas and the increased demand of food may trigger intensive production for land that remains in agriculture (Satterwaitte et. al., 2010).

3.4 How do global initiatives of rural development translate in the local context of Malawian smallholder farming?

In Malawi, a number of global rural development initiatives have played a major role in smallholder agriculture (Chilimampungu, 2006; FAO, 2017). This section identifies agreements existing at international, regional and local levels. They have been chosen because of the decisive and leading roles they play in forming the development trajectory of Malawi.

3.4.1 The formation of regional economic agreements

One of the regional economic agreements that Malawi subscribes to is the Southern African Development Community (SADC), which has as one of its objectives the promotion of sustainable and equitable

economic growth, and socio-economic development through the harmonisation of political and socioeconomic policies and plans of member countries (CAADP, 2010). As a SADC member, Malawi is also committed to the Comprehensive African Agriculture Development Programme (CAADP), which is a commitment by African countries to pursue economic growth through agriculture-led development to reduce poverty and hunger on the continent (CAADP, 2010). CAADP is expected to serve as a framework that adds value to national and regional strategies for the development of agriculture. Some of its key principles that are expected to add value are the building of partnerships, dialogue, peer review, and mutual accountability at all levels as well as exploitation of regional complementarities (Chirwa, 2014; CAADP, 2010). The commitments outlined in CAADP have subsequently been reaffirmed in numerous declarations including the Abuja Declaration on Food Security and Fertilizer for the African Green Revolution in 2006 (Chirwa, 2014). CAADP countries are expected to achieve 6% growth in the agricultural sector and allocate at least 10% of the national budget to agriculture (CAADP, 2010). Since the endorsement, CAADP is mentioned in Malawi's agricultural plans and the CAADP visions are acknowledged and shared. Malawi formulated its Agricultural Sector Wide Approach (ASWAP) as a successor to the Malawi Agriculture Sector Investment Programme (MASIP) with the same objective of harmonizing investments and support in agriculture. Malawi signed a CAADP Compact in 2010, and from 2011 the ASWAP became the National Agriculture Investment Plan (NAIP). So, instead of formulating a new NAIP, Malawi made its already existing ASWAP the NAIP under CAADP such that in this way there was continued one main national agriculture programme. This implies that the 2011-2016 ASWAP was aligned to CAADP principles and pillars.

The commitment to increase the sector's budgetary share to 10% was also included as one of the guiding principles in the country's current agricultural strategy (CAADP, 2010). Malawi's CAADP implementation processes are investment-oriented in the sense that they are expected to generate additional investments in the agricultural sector. However, they may be generating unreasonable expectations of enhanced donor support at the end of a short process without adequately addressing the reasons for inadequate investments in agriculture (Kolavalli, 2010). In addition, key decision makers may perceive that the benefits from investing in agriculture, particularly by increasing expenditures through the ministries, are not high or at least not as high as in other sectors such as education and health, which usually attract significantly greater shares (Manyewu, 2015).

3.4.2 Liberalization of trade investment and their impact on smallholder farming

Structural Adjustment Policies (SAP) are economic policies which countries must follow in order to qualify for new World Bank and International Monetary Fund (IMF) loans and help them make debt repayments on the older debts owed to commercial banks, governments and the World Bank (Chirwa, 2005). Although SAPs are designed for individual countries, they have common guiding principles and features including export-led growth, privatization and liberalization, and the efficiency of the free market (Chilowa, 1991). SAPs generally require countries to devalue their currencies against the United States dollar; lift import and export restrictions and remove price controls and state subsidies (Chilowa, 1991). Devaluation makes their goods cheaper for foreigners to buy and theoretically makes foreign imports more expensive. In principle it should make the country wary of buying expensive foreign goods. In practice, however, the IMF actually disrupts this by rewarding countries with large foreign currency loans that encourages it to purchase imports (Chilowa, 1991).

Balancing national budgets can be done by raising taxes, which the IMF frowns upon, or by cutting government spending, which it definitely recommends. As a result, SAPs often result in deep cuts in programmes like agriculture, education, health and social care, and the removal of subsidies designed to control the price of basic goods such as food and milk. Eventually, SAPs hurt the poor most, because they depend heavily on these subsidized services and products. In essence SAPs encourage countries to focus on the production and export of primary commodities such as cocoa and coffee to earn foreign exchange, although these commodities have erratic prices (Ng'ong'ola, 1996). These have implications on smallholder farmers especially women whose production targets are not on exports.

Since the adoption of structural adjustment programmes in Malawi, there has been a progressive liberalization of markets, with the state withdrawing its direct interventions in various markets including input markets, output markets and financial/capital markets (Ng'ong'ola, 1996). However, the liberalization of markets has had little impact on agricultural development in Malawi. The period during which Malawi was implementing structural adjustment reforms, which mainly focused on the agricultural sector, also registered lower average growth in both the Gross Domestic Product and the agricultural sector, while the poverty situation worsened. The failure of economic liberalization in agriculture has been attributed to many factors (Dorward et al., 2005). Those that advocate economic liberalization attribute the failure of liberalization to the fact that it was only a partial liberalization, as well as to the many policy reversals and policy uncertainties witnessed during the period. For instance, the withdrawal of fertilizer subsidies that started in 1987, which was reversed in 1992 after a significant drop in the uptake of fertilizers by smallholder farmers, and finally removed in 1996 (Dorward et al., 2011).

Another cited example of liberalization is the liberalization of agricultural markets, which has not been fully implemented and the state marketing agency continuing to play a significant role in the marketing of smallholder agricultural produce (Chirwa, 2005). These uncertainties have created disincentives for the development of the private sector. Others such as Dorward et al. (2005) note that liberalization ignored the importance of market coordination and the positive role the state plays in 'kick starting' agricultural development in economies with thin markets. For instance, the collapse of the government administered credit scheme in Malawi in 1992 adversely affected fertilizer use among smallholder farmers leading to declining productivity (Chirwa, 2005). This may be suggesting a need for market support towards the smallholder sector, particularly in remote rural areas in which the private marketing system is not fully developed due to, among other things, poor infrastructure.

3.4.3 The Green Belt Authority

The Government of Malawi in 2006 established the Green Belt Initiative (GBI) which transformed into an Authority (GBA) in 2016 to spearhead use of the available water and land resources for commercial irrigation. The rationale of the initiative is to improve food security through ensuring that commercial farmers have access to large tracts of land for agriculture at the highest possible economies of scales, and that large tracts of land are made available to large scale investors to increase agricultural productivity. However, critics claim that the GBA is facilitating both national and foreign land grabs of smallholder farms in areas designated for the GBA (Chinsinga, 2016). This has serious implications for the rights of smallholder farmers considering the now over 10-year impasse in the land reforms process. Unlike the political and economic elite, community members are ambivalent about the benefits of the GBI (GoM, 2017). The lack of clarity of rules, procedures and processes for land transfers are constraints for a transparent

and accountable private sector rush for land under the GBI. The GBI might potentially undermine instead of enhancing food security because commercial farmers will have to develop land and grow crops of commercial interest to them. Even if foreign investors decide to grow food crops, there are no mechanisms to restrict exports in the event of a food crisis in the country (Chingaïpe et al., 2011). Moreover, seasonal land collectivization under GBA may force smallholder farmers to shift from inter-cropping to mono cropping. Farmers are thus required to follow a uniform farming calendar and plant the prescribed crop in the scheme. This practice threatens diversification of local livelihoods and destroys one of the viable safety nets for poor farmers (Chinsinga, 2016).

4. Conclusions and recommended policy interventions

4.1 Conclusions

This study was conducted to identify the cultural and demographic conditions and related policies influencing agriculture and food security in Malawi through a literature review. The study establishes that culture is central to access to land, the division of labor, cropping systems, control of household income and food sharing, the relations between people living in urban and rural areas and the existing global initiatives. These have a bearing on agricultural production and subsequently on food security and can be concluded as follows:

Cultural beliefs in Malawi deprive smallholder farmers' strides to engage in farming and ensure food security due to:

1. **Insecure land tenure system for smallholders:** In Malawi, cultural prejudices on access to land have huge repercussions on crop production and subsequently on food security. The institutional lineage arrangements (matrilineal or patrilineal) under which smallholders gain access to land influences the type of crops to be grown, the length of time (years) the land that can be cultivated and possible long-term land improvement measures. This land tenure insecurity for rural farmers contributes to high levels of rural poverty as a result of low and unsteady sources of livelihood, which may also result in poor agricultural investments, such as low use of agricultural inputs and soil management, leading to low agricultural productivity and hence high levels of food insecurity.
2. **The conviction that maize is the main staple food and hence the main focus of investments:** Maize production dominates most smallholder farmers' on-farm work in Malawi. Almost 80% of all cultivated land is planted with maize, mostly farmed by resource-poor smallholders, especially women. Globally, this has left the country vulnerable to price fluctuations while at the farm level, the lack of crop diversification has kept malnutrition levels high.
3. **The development efforts and the perceptions that a man must decide on division of labor and income, farming practices and choice of crops:** In Malawi, men have more control over household assets giving them a greater influence over household decisions. The decision on whether to invest in maize or cash crop farming is largely vested in the hands of a head of the household and these are mostly men. Nevertheless, income controlled by women has a positive and significant influence on household quantity (caloric consumed) and quality (enough vitamins and minerals per calorie) intake. The unequal division of labour, income and decision making among household members impedes the ability of women to develop their capacities such as skills development to effectively contribute to agricultural production and hence affected by food insecurity challenges.

Poverty in Malawi erodes the rural sectors of productive labor to urban areas in search for jobs: In Malawi, urbanization has created a situation whereby there is less labor available in the rural sector due to migration of the productive and strong labor work group, the young and educated, to urban areas. Furthermore, most youths in the country do not aspire for agricultural farming as a career due to its poor profitability and low professional status and hence migrating to urban areas. This shortage of rural productive labor has resulted in less commitment/investment by smallholder farmers in agriculture such as low use of agricultural inputs, modern technologies and agricultural land resulting in low agricultural productivity and hence increased food insecurity levels in the country. Moreover, urbanization has also brought about family breakages leading to a rise in female headed families when men migrate to cities to look for greener pasture. Dependence on input handouts and global initiative policies enhances food insecurity: The subscriptions to various regional economic agreements with bodies such as the Southern African Development Community (SADC) have implications on smallholder agriculture and food security in Malawi. Smallholders are in many cases unable to withstand competition from cheaper imported products or open markets of their agricultural produces. Furthermore, with Structural Agricultural Policies (SAP) and other initiatives including the Green Belt Initiative (GBI), the Government has somehow withdrawn its direct interventions in various markets, including input markets, output markets and financial/capital markets, and also not intervened in land grabs affecting smallholders' ability to expand in agriculture. This has increased food insecurity levels amongst the smallholders.

4.2 Proposed Policy interventions

The analysis of cultural and demographic conditions for agriculture and food security in Malawi leads to the following policy recommendations:

- Promote a secure land tenure system for smallholders to ultimately boost agricultural production amongst smallholders.
- Invest in interventions that enhance knowledge, information and good practices for smallholder farmers to produce nutrition secure food and improve livelihood strategies.
- Support interventions that promote income diversification among smallholders in order to cushion against food insecurity. This should include ensuring farmers' access to credit, transportation, education and markets for agricultural products; and promoting non-farm income activities.
- Devise interventions directed towards women and youth that increase their knowledge and access to key production inputs as well as increasing their status in the household to improve the gender gaps affecting agricultural production and thus enhance food security.
- Provide effective support for interventions and practices that facilitate intensive farming and develop markets for high value products to increase smallholder farmers' income per hectare.
- Construct state interventions that change the subsistence nature of agricultural production into commercial production as a possible alternative to improve the country's food security.
- Support interventions and practices that enhance extension services that are better aligned with the agricultural input subsidy programmes.
- Support and create job opportunities in rural areas in order to reduce the migration of men and youths to urban areas. This will in turn help to support the education of children and by extension, inhibit the practice of underage marriages.
- Direct interventions and practices towards households that are restructured because of urbanization to ensure continued access to quality education.

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