

**SQUEEZED FROM BOTH ENDS:
SMALLHOLDER MAIZE FARMERS BETWEEN PRODUCER
AND CONSUMER PRICE TRENDS**

A CASE STUDY IN WORAWORA, VOLTA REGION, GHANA

Ibrahim Wahab



Master thesis in Human Geography
Department of Sociology and Human Geography
University of Oslo
May 2014

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Dedication

I dedicate this work to my late mum, Nima. All that I am and will ever be, I owe it to you. And to my daughter, Eliana. I hope to be the best dad to you after being an absentee father for the first two years of your blessed life.

*“If you cannot fly, then run, if you cannot run, then walk, if you cannot walk, then crawl, but whatever you do, you have to keep moving forward” – **Martin Luther King Jr.***

Abstract

Smallholder agriculture remains the best and, perhaps, the only livelihood option available to the poorest of the world's poor. Agricultural markets are characterized by price volatility and today's globalized economic system means that maize price increases on the world market ought to have implications for the incomes of smallholder maize farmers. This is, however, not always the case. Also relevant is the cost of consumer goods and services that smallholder maize farmers spend their meager incomes on.

This study looks at a comparison between the local producer price of maize and that of consumer goods that smallholder farming households usually need. It also assesses the implications of these price trends on the real incomes and, by extension, living standards of the smallholders as well as the adaptation strategies they employ to make ends meet. The qualitative research methodology was employed to investigate the above dynamics using the value chain approach and the concept of poverty trap.

I find that the maize value chain in operation at Worawora is buyer-driven and smallholder maize farmers are primarily price-takers. I also find that producer prices of maize at the local level show a high degree of variability both within and between farming seasons, yet they do not seem to follow global price trends. This relatively poor price transmission on the income side of the livelihood of smallholders is not replicated on the expenditure side. I find that prices of consumer goods at the local level are generally higher than in central markets and that smallholders are being squeezed from both ends by virtue of diminishing incomes and escalating expenditures. Not only are they cutting down on consumption as a consequence, but they are also selling off assets that took several years to accumulate, thereby trapping themselves in poverty.

The findings have implications not just for the livelihoods of the smallholders and their agency, but also for the food security of Ghana. This study is, therefore, of the view that, a maize value chain that is producer-driven will significantly boost the incomes and livelihoods of the smallholder maize farmers.

List of abbreviations and acronyms

BWIs	Bretton Woods Institutions
CPI	Consumer Price Index
FAO	Food and Agriculture Organisation
FCUBE	Free and Compulsory Universal Basic Education
GFDC	Ghana Food Distribution Corporation
GHC	Ghana Cedis
GIS	Geographic Information System
GSS	Ghana Statistical Service
GWC	Grain Warehousing Company
IFAD	International Fund for Agricultural Development
IMF	International Monetary Fund
LPG	Liquefied Petroleum Gas
MDG	Millennium Development Goal
MoF	Ministry of Finance
MoFA	Ministry of Food and Agriculture
NAFCO	National Food Buffer Stock Company
NHIS	National Health Insurance Scheme
SAP	Structural Adjustment Programme
SRID	Statistics, Research and Information Directorate
SSA	Sub-Saharan Africa
UN	United Nations
WABS	Agri-Business and Marketing Specialists

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Tusen takk!

Ibrahim Wahab

Oslo, Norway

May 2014

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1. INTRODUCTION

1.1 Background to the Study

Poverty in developing countries is, generally, more widespread in rural areas compared to urban centres while it is well documented that agriculture is the main source of livelihood for majority of these poor rural dwellers (World Bank 2007, Hazell et al. 2010, Croser and Anderson 2011). It is also common knowledge that smallholder farms dominate agriculture in many African countries (MoFA 2006, Wiggins 2009, Diao et al. 2010). Given the preponderance of smallholder farmers and their concomitant limited scale of production, it is no surprise that they constitute the majority of the extremely poor. More interestingly, even within agriculture, there is disparity in incomes and degrees of poverty between farmers who cultivate cash crops such as cocoa and those who cultivate low value food crops such as maize.

Maize has been cultivated in Ghana for several centuries and is, in contemporary times, the most important staple crop in the country, cultivated by the vast majority of rural households in almost all parts of the country (Morris et al. 1999). The crop also has the highest area of cultivation in Ghana, second only to cocoa, though the greater number of people who engage in maize cultivation sets it apart from cocoa. Statistics from the Ghana's Ministry of Food and Agriculture indicates that its area of cultivation as at 2009 was 954,000 hectares, with the highest mean annual growth rate of cultivated area of almost 6% per annum over the preceding decade (SRID-MoFA 2011). This notwithstanding, yield per hectare has not been increasing as it could. This situation has been as a result of a multiplicity of factors, chief among which is the aforementioned dominance of smallholder farms which are mostly cultivated under rain-fed conditions. While yields of up to 6.0 tonnes per hectare is achievable for maize in Ghana, the average yield was 1.7 tonnes per hectare as at 2009 (SRID-MoFA 2011). The low yield per hectare, generally, in Sub-Saharan Africa has led many to question the possibility of a Green Revolution in Africa akin to that witnessed in Asia in the 1960s and 1970s (Diao et al. 2010) or indeed if agriculture-led growth is the way out of the widespread poverty for developing countries, especially those in Sub-Saharan Africa (Birner and Resnick 2010).

1.2 Rational of the Study

In today's globalized world, price changes in food crops on the world market inexorably have repercussions for local market prices. The speed and extent of the transmission of global price variations to local market, especially rural ones, however, varies greatly. More importantly, hikes on the world market to the levels witnessed since 2007 which reached the zenith for maize in June 2011 (FAO 2013), inevitably has consequences for the rural poor (Ivanic and Martin 2008, Islam and Buckley 2009, Ortiz et al. 2011). How this price variation of maize grains impacts the poor in developing countries, however, is influenced by whether they are *net producers* or *net buyers*. Ivanic and Martin (2008), for instance, argue that, while the impacts will be diverse, generally the overall effect is tantamount to rising incomes for net producers and exacerbation of the living conditions of the net buyers.

Also relevant is the cost of goods and services that these smallholder maize farmers need to maintain their living conditions. Even if rising global maize prices are wholly transmitted to rural markets, which is unlikely due largely to a number of agricultural policies which apparently seek to protect local consumers, leading to growth in their incomes, prices of goods and services are likely to be rising faster than that of their maize grains. This would culminate in the deterioration in the living conditions of these smallholders regardless of the growth in their incomes.

It is great paradox when the FAO (2010) points out that over 70% of the world's population living in hunger are food producers who are smallholder and sometimes, landless farmers. This situation is exacerbated by their inadequate access to markets and inability to influence prices of their grains in any way (IFAD 2012). Their limited bargaining power is also symptomatic of their limited level of output (IFAD 2009). Some have argued that the way forward is income and livelihood diversification away from agriculture (Ashley and Maxwell 2001, Yaro 2006, Owusu et al. 2011, Hesselberg 2013). While conceding that smallholder farms appear unviable, Reardon et al. (2003), point out that income and livelihood diversification has been a reality in Sub-Saharan Africa (SSA) for decades but are yet to generate significant improvement in the living standards of rural smallholders. Wiggins (2009) goes a step further to postulate that despite their obvious challenges, smallholder farms are still the way to go and, that, measures to encourage the rural non-farm economy and the provision of social protection should be complimentary and synergistic to smallholder farming in order to ensure broad-based gains.

This study is relevant to the extent that most studies that deal with the rising prices of cereals, particularly maize, tend to concentrate on the effects of the souring prices on households' ability to afford food (Wodon and Zaman 2008, Ortiz et al. 2011, Dorward 2012) as well as its effects on nutrient intake and food security (Ivanic and Martin 2008, Zheng and Hennebery 2012) while others concern themselves with productivity on small farms (Otsuka and Yamano 2005, Sanchez et al. 2009). All these neglect a key aspect of the equation - the cost of living relative to the incomes of smallholders. Using the Ghana Living Standards Survey which is one of the most important tools for measuring the welfare of households in the country, the Ghana Statistical Service - GSS, (2007) posits that poverty is more concentrated amongst *food crop farmers* compared to cash crop farmers.

Furthermore, using data from the 2010 National Population and Housing Census, the GSS (2013) finds that non-monetary poverty – that is not based solely on income measurements but on a multi-dimensional poverty index – stood at as high as 43% compared to 29% for income poverty. More pertinently, the contribution of rural deprivation to the national poverty is estimated at 72%. Al-Hassan and Poulton (2009) explain that while the level of poverty between food crop and cash crop farmers were similar in 1991/1992, 68% and 64% respectively, by 2005/2006, it had dropped to 46% amongst the former group and a lowly 24% for the latter. They then conclude that poverty is concentrated amongst households for whom the production of low value food crops, such as maize, is a major source of income and livelihood.

1.3 Research Questions

More specifically, the study will answer the following research questions:

- *How does the local producer price of maize compare to the prices of consumer goods that farming households usually need?*
- *How do differences in the price trends affect the real incomes, and hence, standard of living of smallholder maize farmers?*

The study will primarily seek to explore the trends in producer price trends of maize at Worawora, *vis-à-vis* the price trends of other consumer goods and services that smallholder farmers see as essential to their livelihoods in order to give an indication of their income streams compared to their

cost of living. The second part of the research question will explore the implications of these trends on the living conditions of these smallholders.

1.3.1 Relevance of Research Questions

These are important questions because, with less than a year to the 2015 deadline, the first of the eight Millennium Development Goals (MDGs); eradicating extreme hunger and deprivation¹ appears to be a mirage. It is interesting that the MDG report of 2013 argues that significant and substantial progress has been made in many of the targets, including the sub-goal of the first target; halving the number of people living in extreme poverty, while it also admits that this progress has been uneven among and within countries (UN 2013). The report's claim that the target on poverty and hunger has been met is questionable because while target number one of the MDGs explicitly states eradicate extreme poverty and hunger, the report touts halving the proportion of people living in extreme poverty on the global level as achieving the target. It is important to point out that poverty eradication is almost impossible in the practical world and so any target of eradicating poverty is ill-advised from the onset.

This brings to the fore, the global development agenda post-2015. The first target of the current MDGs will have to take centre-stage of any post-2015 global development agenda and SSA will, necessarily, have to be a key component of that agenda. This is because it is the only region of the world that the number of people living in extreme poverty has been rising steadily from 290 million in 1990 to 414 million in 2010 (UN 2013). One cannot possibly argue that at the global level, we are making giant strides towards eradicating, or even halving, extreme poverty when SSA will still be home to as much as a 40% of the developing world's population living in extreme poverty. Concerted efforts must be made to ensure that SSA is carried along with the rest of the world with regards to poverty reduction. Under the current circumstances, the living conditions of smallholder maize farmers in the region in general, and Ghana in particular, appear to be heading for the worse rather than for the better. The conundrum is increasing their incomes at a faster rate compared to the rate of increase of cost of living because as long as the latter rate is faster than the former, more

¹ <http://www.undp.org/content/undp/en/home/mdgoverview/>

smallholder farmers will continue to fall into poverty traps and those already trapped in poverty will find it increasingly more difficult to break out of them.

1.4 Structure of the Thesis

This thesis will be presented in seven chapters. Chapter one which will be an introductory chapter will give a background to the study on maize producer prices and the impacts on smallholder maize farmers' incomes as well as the rationale of the study. It will end with the relevance of the research questions and the structure of the thesis. Chapter two will cover issues concerning transmission of global prices to local markets, governments' intervention in maize marketing and pricing in a developing country like Ghana and discuss the possibility of a uniform pricing regime across the country. It will also cover the consumption of maize diets in Ghana. This chapter will conclude with a detailed description of the study area, Worawora, in terms of the economic characteristics, ethnic composition, land ownership structure, social and historical characteristics and then zoom in on maize farming in the community.

Chapter three will discuss the *Value Chain Approach* (VCA) and the concept of *Poverty Traps* as analytical frameworks. Here, I will apply the approach to explain the differences that occur between producer prices and market prices of maize as well as how producer prices compare to world market prices. The concept of Poverty Traps will be useful in exploring how smallholder maize farmers who unsurprisingly, find themselves at the lowest end of the maize value chain, usually are locked in poverty traps that they find virtually impossible to break out of. The fourth chapter will give a detailed account of the methods I employed in the data creation process. This will encompass pre-fieldwork preparations and choice of informants while discussing the significance of each technique from the in-depth interviews, through the discussion groups to the field observations. It will close with issues of gaining access and ethical considerations.

The two subsequent chapters; five and six, will form the mainstay of the thesis as they will analyse data from the fieldwork. Chapter five will therefore discuss the trends in the local producer price of maize and compare this to the trends in the prices of consumer goods that farming households need. It will then assess how smallholder farmers make a living while being squeezed from both ends. In the sixth chapter, I will assess the short-, and long-term effects of these price

trends on the incomes of the smallholder farmers and how this leads to further impoverishment of a segment of society, majority of whom already languish below the poverty line, while pushing others, who hitherto, were doing fine economically, into poverty as well as some adaptation strategies the smallholders employ to survive and, perhaps, flourish. The seventh and final chapter will provide summary and conclusions as well as discuss major findings as well as the relevance of these findings to other maize farming communities within Ghana and other developing countries and then conclude with prospects for future research.

2. MAIZE FARMING IN GHANA

2.1 Introduction

In spite of finding oil in commercial quantities, agriculture remains the main form of activity for the vast majority of the population of Ghana, particularly in rural areas. Maize farming is ubiquitous among farmers in Ghana, so much so, that almost all farmers have a portion of their farms dedicated to the cultivation of maize. About 20% of smallholder households are dependent on maize as the primary source of income (WABS Consulting 2008). Morris et al. (1999) also posit that maize is cultivated by the vast majority of rural households in all parts of the country, with the possible exception of the northern-most part of the country where adverse climatic conditions in the Sudan Savanna zone is not conducive for the cultivation of the cereal. It is predominantly done in a traditional way, on a subsistence basis, with the cutlass and hoe being the main farming implements. As a result, the Ghana's Ministry of Food and Agriculture estimates that as much as 90% of farm holdings are on plots of less than 2 hectares in size, (MoFA 2011), though there a few large farms and plantations (WABS Consulting 2008, MoFA 2011). These large farms generally apply modern and mechanized methods of maize cultivation.

That maize is an important cereal crop in Ghana is an understatement. Morris et al. (1999) point out that it is the country's most important cereal crop. Its importance is exemplified by the proportion of the total land area dedicated to maize cropping, comparable only o that of cocoa. It must however be pointed out that the dissimilarity between the crops makes maize even more relevant. While cocoa is a perennial tree crop, maize is cultivated annually and biannually. More crucially, the proportion of farmers who engage in maize cultivation is much greater than that which cultivates cocoa. Badiane and Shively (1998) also point out that by 1988, maize constituted 55% of cereal demand and 66% of cereal supply in Ghana and that this exemplifies the widespread importance of the crop among Ghanaian producers and consumers. This implies that the income and livelihoods of more smallholders are intricately linked with maize cultivation which also means that it is a strategic crop in attempting to lift rural farmers above the poverty line on a broad scale.

Ghana consists of five main agro-ecological regions: the Coastal Savanna, the Rain Forest, the Deciduous Forest, the Guinea Savanna and the Sudan Savanna Zones. As indicated earlier, the Sudan Savanna is the exception with regards to maize cultivation, due mainly to the desert-like conditions in that zone. The remaining four have seen and continue to see significant levels of maize

cultivation, though there are variations between the zones in terms of cultivation levels and cropping systems (Morris et al. 1999). This is, largely, due to the variability in the amount and distribution of rainfall across the zones (Koli 1970), since most, if not all, of the maize cultivation is done under rain-fed conditions and so yields are dependent on the vagaries of the weather.

The tropical location of Ghana means that the country experiences two main seasons – the rainy season and the dry season. Maize cultivation is done biannually in the Coastal, the Forest and the lower parts of the Guinea Savanna ecological zones (Koli 1970). These two seasons are timed to correspond with the main rainy and the minor rainy seasons in June-July and September-October respectively. Notwithstanding a few variations depending on climatic zones, the general approach is that farmers cultivate the minor season, in which seeding is done by the end of September, using slash and burn techniques and then intercrop the maize with other root crops such as cassava or cocoyam. This is done so that these root crops are left after the harvest of maize is completed about three months later. Though it is often described as minor, this planting season is quite important to farmers because it the best of the yield from this planting season that is used as seed for the major planting season. For the major season, maize is planted as a mono-crop under the fallow system where plots are left to lie idle for a couple of seasons to regain their fertility before they are prepared for cultivation again. Koli (1970) posits that the optimal planting date for maize varies from one ecological zone to another and that, in many cases, planting 2 weeks early or late relative to the optimum planting date leads to 40-55% losses in crop yield.

The technique of rejuvenating the fertility of the soil through fallow periods is becoming increasingly unsustainable, due in large part to the land tenure system. Thus, the system where children inherit land from their parents and pass on such plots of land to their own descendants invariably means that plot sizes will inexorably shrink in size through generations. This, of course, will not be the case if and when some siblings migrate to urban areas to engage in non-agricultural economic activities. It is important to note that the smaller plots available per a farmer also means reduced fallow period and consequently low productivity due to low soil fertility. Paradoxically, the low yield per hectare that this land tenure system portends also means that smallholder maize farmers require increasingly larger plot sizes just to maintain constant levels of production.

Low productivity is a major challenge of maize farming in Africa (Diao and Hazell 2010) and Ghana is no exception. Morris et al. (1999) argue that this is, largely, due to the continued

reliance on traditional farming methods, the use of rudimentary farming implements and the sluggish pace of adoption of modernized farming techniques. Despite the consistent increases in the mean production growth rates, an average grain yield of maize per unit land area is still scant. This means that, in spite of current low yields per hectare, the potential to significantly increase the total annual production of the crop from about 2 million tonnes (MoFA 2010) and in the process, boost the maize farm incomes is enormous.

The above notwithstanding, it is pertinent to note that maize farm incomes are not only dependent on yield per hectares. That is, improvements in yield and productivity are necessary but inadequate prerequisites for improving incomes and livelihoods of smallholder maize farmers. Prices that maize farmers get for their maize cereals at the local market should reflect world market trends.

2.2 Maize Price Transmission from the Global Market to Local Markets

Ideally, increasing prices of maize on the international market should translate into growing incomes for farmers. Proponents of the *Washington Consensus* recipe argue that a greater engagement with international markets through specialisation would give national economies, and by extension, its individual farmers, greater incomes (Chang 2009). However, most developing-country maize producers are far distanced from what happens on the international agricultural commodity market (FAO 2009), such that price hikes as they occurred since 2005 and reached a zenith in mid-2008, do not necessarily mean higher prices and increasing incomes for smallholder maize farmers in these countries. Badiane and Shively (1998) postulate that the price adjustment process in a market is determined by the degree of inter-dependence between the market and the central market in which a price-shock originates and that a change in the degree of market connectedness affects prices both contemporaneously and dynamically through impacts on transport.

Agricultural markets are usually fraught with these market deficiencies. Consequently, the degree of price transmission from the global market to markets at the national level and further down to regional and local levels is usually weak. In such a situation, smallholder farmers lose the incentive to invest and increase productivity since the chance of benefitting from increasing global prices is little to non-existent. Transportation costs are a major determinant of the level of price

transmission both from the international market to national markets and from the latter to local markets. As with most Sub-Saharan African countries, high transport costs, poor infrastructure and communication services in Ghana necessitate high margins and this hinders transmission of price signals, leading to domestic prices responding slowly to increases in maize prices on the international market (FAO 2009).

How smallholders are affected by prices on local markets is dependent on their level of participation in these markets which are, in turn linked, to different extent, to national, regional or international markets. Diao and Hazell (2010) posit that the greatest potential for most farmers lies in domestic and regional markets but Badiane and Shively (1998) argument that rural maize markets in Ghana are relatively isolated which implies that price changes are poorly transmitted between central and regional markets and local markets so that price changes does not amount to much. This is especially so since their participation is not even guaranteed because they engage in a different value chain from that which commercial farmers use (FAO 2009). Given their limited market participation, and even where they do participate, the weakly integrated nature of maize markets in Ghana, price increases at the international level are not likely to have any telling effect on the livelihood and income of smallholders.

The above notwithstanding, in a contemporary more integrated global economy, prices are invariably determined, or at least influenced by border prices rather than domestic supply since free trade is largely the norm in the post Washington Consensus era and Diao and Hazell (2010) point out that this reduces the incentive to invest in domestic agricultural development. If there were any illusions as to the effectiveness and altruism of international cereal trade, especially in maize, the alacrity with which producing countries moved to restrict export, ostensibly, to protect local consumers, suggests that even where cheaper imports exist, the prudent course of action is the development of local maize production rather than over-reliance on imports.

2.2.1 The Role of Government in Maize Marketing and Pricing

The imperfections in agricultural produce markets make it imperative that governments play critical roles in them and this is more so in a developing country like Ghana. Chang (2009) argues that, if left to its devices, the market would not be able to supply optimal quantities of many necessary

agricultural inputs nor provide the means to attain stability in rural incomes and that the state has to provide for these public goods by putting in place deliberate measures to stabilize rural incomes. Some of the measures available to the state are buffer stock management, trade protection, insurance for crops and support for processing and marketing. Critics of this approach point out the *market distortions* that these interventions create. Jayne et al. (2002) posit that maize output markets oscillate between state-managed and controlled on the one hand, and largely liberalized on the other hand under donor pressure. It is, however, interesting to note that while liberalisation policies were being touted as the magic bullet for the imperfections in agricultural markets across SSA in the 1970s and 1980s, several Asian countries were promoting smallholder-based agricultural intensification, backed by price guarantees, leading to the Green Revolution (Birner and Resnick 2010).

Chang (2009) postulates that developing countries that followed other approaches to managing agricultural markets than the Washington Consensus policies have had generally much superior results. He justifies state intervention in agricultural markets by arguing that, in countries where there is no citizenship-based welfare system or well-designed safety nets, certain distortionary policies such as tariff protection or price stabilisation schemes may be the only mechanisms that can provide income stability to smallholder farmers. Elimination of these distortions is what underlines the Washington Consensus. Khor and Hormeku (2006) explain that prior to the 1980s, agricultural pricing and marketing interventions were useful policy instruments for protecting smallholder farmers in Ghana. To provide market outlets for such farmers in remote villages, the government established the Ghana Food Distribution Corporation (GFDC) and the Grain Warehousing Company (GWC) in 1971 and 1975 respectively. These two institutions had the responsibility of purchasing locally produced agricultural products, including maize, from farmers for distribution both locally and on the global market. This scheme was complemented by a system of minimum guaranteed prices for cereals such as maize. The positive aspect of this guaranteed minimum producer prices is they ensured that the smallholder farmer is assured of at least a minimum level of price. The downside, however, is that, these minimum prices were usually fixed at levels much lower than what private traders offered. This is interesting because, where private traders are competing with state institutions for maize grains, the farmers were the ultimate beneficiaries since they had the option of which channels to use to dispose of their grains.

With the implementation of the IMF-sponsored Structural Adjustment Programme, such state institutions such as the GFDC and GWC were abolished. Coupled with the elimination of the import licensing system by 1990, agricultural produce could be imported into the country without any restriction (Khor and Hormeku 2006). Raman (2007) posits that cheap maize imports has caused numerous challenges to farmers and traders in Ghana and that imported maize could be up to a third cheaper than locally produced maize. This is because, with liberalisation, both smallholder maize producers and consumers are exposed to the international grain market volatility and competition from relatively cheaper imports. The odds were stacked against the local producer because while subsidies were being removed, their counterparts from the developed world still enjoyed considerable subsidies and protection. Badiane and Shively (1998) concurs when they argue that following the reforms, local producer prices for maize fell while seasonality in prices remained high, with inter-year price volatility primarily driven by domestic production levels and local storage.

It is in the light of the above that the government deemed it relevant and necessary to re-enter the maize marketing domain in recent years. It did this by instituting a number of interventions such as subsidizing fertilizer prices and improved seeds in order to increase productivity. To insulate farmers from the glut on the market that usually result from such improved production levels, the National Food Buffer Stock Company (NAFCO) was established in 2010. The NAFCO was mandated to give guaranteed minimum prices for maize to assure farmers of stable incomes as well as mop up excess production on the market using a buffer stock mechanism to stabilize demand and supply.² According to the Ghana's MoF (2011), the NAFCO off-loaded over 10,000 tonnes of maize onto the market in mid-2011 to stabilize prices. The conundrum is that, on the one hand, where marketing systems for maize are completely liberalized, farmers reap huge rewards when world market prices increase, like they did between 2006 and 2011 (FAO 2013), leading to maize prices jumping by almost 300% between January 2005 and June 2008 (Mitchell 2008) while plummeting world market prices inexorably plunge smallholders into further misery. On the other hand, in price controlled systems where quasi-state institutions play key roles in grain marketing and pricing, smallholders may be shielded from the volatility of the world market but they invariably receive prices far below the prices in these markets. While Badiane and Shively (1998) caution against an

² http://mofa.gov.gh/site/?page_id=705

expanded role for the public sector in grain marketing in Ghana, Chang (2009) is of the view that liberalisation has been, largely, negative for the income stability of farmers and that, notwithstanding the additional fiscal burden, provision of such services and facilities as warehouses for grain storage, subsidies on crop insurance and some trade protection is key to the success of smallholder maize farmers.

2.2.2 Uniform Pricing of Maize

Slight maize price fluctuations, across time and space, to a large extent, are inexorable, acceptable and even desirable. Where the fluctuations are extreme, however, they become counter-productive to poverty alleviation efforts. Ironically, as Chang (2009) points out, price fluctuations are most violent at the early stages of development and this is exacerbated by the lack of even relatively simple things like warehousing facilities forcing farmers to sell soon after harvest time which creates an unnecessary glut in the market. Smallholder farming is exposed to a range of market failures which require supporting public policies to correct. Maize pricing policies should be formulated to favour smallholders in particular and maize farmers in general. Birner and Resnick (2010) however, explain that while such policies aimed at correcting market failures, especially at the early stages of development, are a promising strategy for achieving pro-poor growth and poverty reduction, they are difficult to implement.

In reality, it appears the state is unsure about its roles in maize pricing. On the one hand, it is interested in protecting the consumer from the volatility on the international market and on the other hand, it sees the need to put in place policies and programmes that will assure farmers of, at least, some minimum price. This balancing act, however, tend to lean towards allowing market forces of demand and supply to determine prices of maize grains. The existence of what Chang (2009) terms *oligopsonistic practices*³ in maize marketing in Ghana allows the few maize merchants to extract large profits from smallholders who are generally price-takers. Even where perfect competition exists, the smallholder maize farmer loses out by virtue of producing on small-scales and limited bargaining power, and so is unable to influence prices. The state is then tempted to determine pan-

³ Refers to a market condition in which the purchasers of a produce are so few that the actions of anyone of them can materially affect price and costs that competitors pay for the produce.

seasonal and pan-territorial producer prices (Holmen 2005). Under prevailing conditions, this is, largely, unrealistic due to a number of factors including poor transportation infrastructure from farm gates to market centres. Thus, where prices are determined solely by market forces, maize buyers peg producer-prices far below the market price in order to accommodate burgeoning transport costs. In the end, the smallholder maize farmer does not get a price that is reflective of the market price of the grains they produce.

The best chance of a uniform national producer-price for maize will have to follow the approach adopted by the Cocoa Marketing Board which has marketing centres in almost all major towns and provides transport for cocoa buying companies that have agents in these cocoa producing areas. Under this arrangement, the buying agents make commissions on their purchases rather than being expected to make profits. By so doing, nationally set producer-prices are adhered to strictly and more importantly, the farmers know the rate and so are assured of stable prices. This scheme appears to be effective since Ghana is, currently, the second largest producer of cocoa in the world. There is, however, the risk of pegging national producer-price way below world market rates. In such a situation, there would not be paucity in private traders who would be prepared to export, legally or otherwise, to neighbouring countries for better prices.

Whether at uniform prices or at prices determined by market forces, the fundamental requirement ought to be maize farmers' ability to influence the prices at which they sell their grains. One of the most effective tools in this regard, is the collectivisation of smallholder maize farmers into co-operatives to expand producer-driven maize value chains. Birner and Resnick (2010) point out that smallholders face huge obstacles in their quest to form co-operatives to engage in collective actions to protect their interest, explaining that the absence or poor organisation of such collectivities strongly explains why developing countries tax agriculture while their developed counterparts protect the sector. Be that as it may, the role that a co-operative of smallholder maize farmers could play in the value chain of maize and in influencing prices of the grain and by extension, farm incomes cannot be overemphasized. The NAFCO's guaranteed minimum price which is supposed to be nationally uniform is in reality neither uniform at the farm gates nor does it really benefit farmers

largely due to the narrow scope of the buffer stock scheme and the unclear role that the buying companies play.⁴

2.3 Consumption of Maize Diets

Maize is the most widely consumed staple food in Ghana and an important source of carbohydrate, protein, vitamins and minerals. It is consumed in a variety of forms in all parts of the country. It may be used for human diets, or otherwise used for production of animal feed, maize oil, and beer brewing. Wanzie (2009) points out that though human consumption and animal feed are especially important uses for maize in Ghana, its demand as a key source of poultry feed is growing rapidly as the rate of urbanisation in the country accelerates. The estimated national consumption rate is about 1, 070,000 tonnes as at 2010, with per capita consumption pegged at 44 kg per annum (MoFA 2011).

It is interesting to note that, despite its widespread popularity as a staple food, maize is not the highest contributor of calories to human diets in Ghana; that accolade belongs to root and tubers crops such as yams, cassavas and cocoyam. Morris et al. (1999) point out that even in areas of the country where maize is a leading staple such as the Volta, Central and Southern Regions, it would be unusual to find maize contributing more than 35% to household calorie supply. An analysis based on a 1987 data showed that maize and maize-based foods accounted for about 11% of household food expenditure by the poor and a percentage point less for all income groups (Boateng et al. 1990). This is corroborated by MoFA (2011) data which shows that there was only a meager increase in per capita consumption of maize over a quarter of a century period between 1980 and 2005 from 38 kg to 44 kg per annum.

The above notwithstanding, maize still performs crucial roles in the diet of majority of Ghanaians. Green maize – fresh on the cob – for instance, is eaten baked, cooked, parched or roasted and plays an important role in filling the hunger gap before harvest time. Cooked fresh maize, eaten with coconut as afternoon snack, sold by food sellers is increasingly becoming a common sight in both rural areas and urban centres.

⁴ http://www.agro-info.net/?menu=projects&view=project&project_id=25067#

When it is dry and harvested, its uses are diverse. It is commonly milled into maize flour or dough and then made into a thick porridge locally called *Koko*, and eaten as breakfast across the length and breadth of the country. Sugar and/or milk is usually added to taste and eaten with roasted groundnut, bread or *Kose*. In the southern parts of the country, the dough is allowed to ferment and then used to prepare more solid dishes such as *Kenkey* and *Banku*. The former is the most popular dish of the *Ga* people of the Greater Accra Region, though it is not uncommon to find it being sold in both rural and urban areas. *Akple* is another popular dish made from maize flour and common among the *Ewes* of the Volta Region, again, though it is eaten in other parts of the country as well. Apart from the above, there are several other kinds of dishes that can be prepared from maize and which is typical to certain parts of the country but consumed in many urban homes due, largely, to the metropolitan or cosmopolitan nature of urban areas. These include *Apapransa*, *Asanaa*, *Etew*, *Oblayo*, and *Tom-Brown*. *Apapransa* and *Tom-Brown* are both made from flour of roasted corn, but the latter is made as a thick porridge and eaten as breakfast, the former is prepared in a more solid form with palm oil and eaten as lunch or dinner.

Morris et al. (1999) argue that many of the dishes made from maize require considerable time and skill to prepare and this is the reason why a significant proportion of all maize consumed in the country as human diet is purchased from specialized food sellers as prepared food. They also point out that though prepared maize foods are also important in rural areas, they are more vital in urban centres. This might, partly, be as a result of the exigencies of time due to relatively longer hours of both formal and informal work in urban areas. It is not uncommon to find workers rushing to buy *Koko* for their breakfast on their way to work and for those who close from work late and do not have ample time to prepare home dishes, rushing to the nearest *Kenkey* seller. Both of these maize-based diets are sold on almost every street in Accra and Tema at all times of the day, though the mornings and evenings are the peak periods of patronage.

It is important note, however, the relative importance of other grains such as millet as well as popular foods such as bread in Ghanaian diets. Millet, for instance, though quite popular in certain parts of the country, cannot compare to maize in terms of per capita consumption which is a good thing since climatic conditions in the country are not favourable to the cultivation of the former. This would have put further stress on the country's balance of payment problems in the face of rising export prices and scarce foreign exchange. With regards to bread, in spite the so-called bread-wave,

it has not really replaced maize as a popular diet. In most cases, bread is rather eaten as an accompaniment to maize-based breakfast diets by some while others prefer other condiments to bread for their breakfast.

2.4 The Study Area

The study area, the township of Worawora, is located in the Biakoye District of the Volta Region of Ghana. The district, with its capital at Nkonya, was carved out of the Jasikan District in 2008. The study area is bordered by Kudje on the South, Asato to the East, Apeso Kubi and the Volta Lake to the North, and Tapa Amanyia to the West. Worawora is the second largest and most populous settlement in the district, with a population of about 9,000 and was even mooted as a district capital due to its strategic central location as the map below shows.⁵

The town is well-drained by a number of rivers and streams with the *Kabo* River being the major water system. The vegetation is predominantly deciduous and semi-deciduous forest with tree species such as the *Odum*, *Wawa*, and *Sapele* dominating the tree line, though the activities of timber firms and illegal chainsaw operators are contributing in no small way to forest degradation. The undergrowth in large areas is dominated by the *Acheampong* weed, which the indigenes of the area believe is favourable to maize cultivation. It also experiences a double maxima rainfall regime with peaks in June and October. Rainfall averages between 1,250 mm and 1,750 mm per annum while the dry season which usually occurs between December and February is characterized by cool and dry wind. The town also experiences temperatures range of 22°C and 32°C.

⁵ The empirical data in this section is sourced from Mr. John Kuma, the District Agricultural Officer of the district.

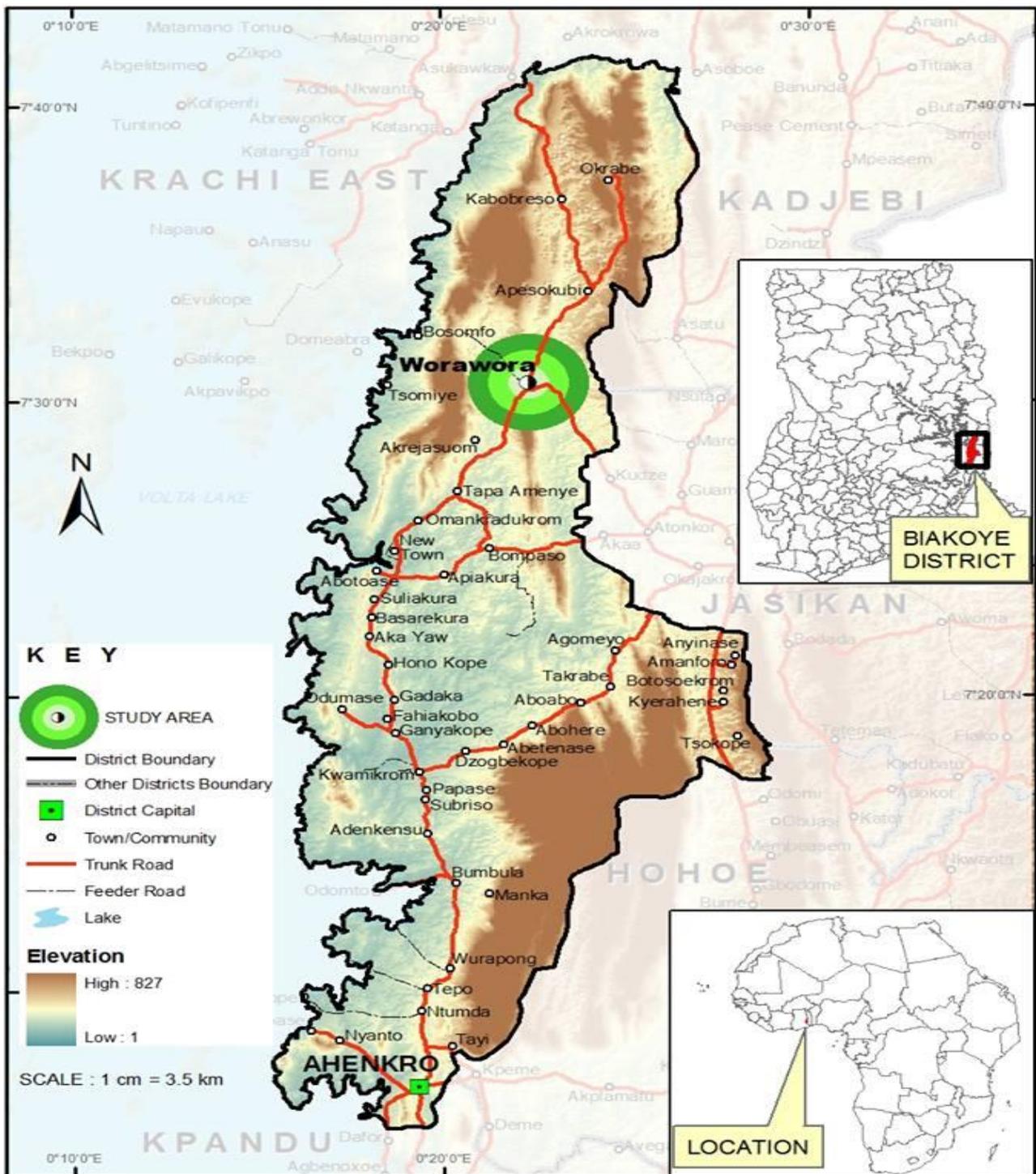


Figure 1: A map of the study area using ArcGIS (version 9.2)

Source: Produced by Michael Ogbe, GIS Specialist, Maphouse Ghana Limited

Like many towns that are predominantly rural in character, agriculture is the main economic activity, though other non-agricultural activities such as petty trading are significant, with others working in the local hospital, schools, and a rural bank. Maize is the main crop of cultivation in the town with area of cultivation close to 1,800 hectares with average production figures of about 2,000 tonnes per year, with Worawora being a major production centre in the district. Almost all farmers have at least a portion of their plots dedicated to maize cultivation every season. Apart from maize, the other food crops cultivated in the study area include cassava, plantain, banana and vegetables, though some cash crops such as cocoa, pineapple, citrus and mangoes are common too. In terms of livestock rearing, goats, sheep and poultry predominate though they are mostly on a small-scale for subsistence purposes. Worawora, therefore, exemplifies a typical maize farming community in Ghana, coupled with my familiarity with the town and its catchment area, I believe, will offer unique advantages which will serve to further enrich the study.

The topography is hilly but undulating, becoming almost flat in some areas, while the town itself is almost surrounded by the Buem-Togo mountain range which is an extension of the Akwapim Ranges. Soil type is mostly loamy with significant proportion being basalt which is formed from the weathering of the Buem ranges, making soils quite fertile for crop cultivation.

As important as road transport is in Ghana, the study area is strategically located as it provides a link between the Northern part of the country and the southern part for the cargo trucks that ply the Eastern Corridor trunk road. This road network is important for articulated trucks that cart farm produce from Northern Ghana to the South while transporting other goods from coastal cities such as Accra, Tema and Takoradi to the North.

In terms of the ethnic composition, a large majority of the population are the Twi-speaking Akans who are the local people with other settler-ethnic groups such as the Ewes, Kotokolis, and the Kabres being in the minority. Since the Akans are the natives of the town, they have access to land by virtue of their family lineage and so usually cultivate maize on their plots or family-owned lands while members of the other ethnic groups typically lease plots of land from the natives or share the yields from their farms with their landlords.

3. CONCEPTUAL FRAMEWORK

3.1 Introduction

In this study, I employ the *Value Chain* approach and the concept of *Poverty Trap* as analytical frameworks in exploring trends in the prices of maize as compared to general consumer prices and how this affects smallholder maize farming households' incomes and livelihoods. This chapter discusses the value chain as an approach to understanding how smallholder maize farmers enter value chains, the barriers to their entry and how this affects the type of chains that they participate in, which, in turn, affects not only their incomes streams but their long term livelihoods. The concept of rent under the framework will be useful in explaining why some activities in the maize value chain are more rewarding than others. The value chain framework will also help to explain how by marketing their maize grains as individuals on smaller scales rather than as a collective, smallholder maize farmers effectively position themselves at a disadvantage and become price-takers since they are, largely, unable to influence prices of their grains. The approach will, particularly, be relevant for explaining differences in the producer price and market price of maize as well as how producer prices compare to world market prices of maize. The poverty trap concept will aid in exploring the implications for differences in the trends of producer prices of maize and general consumer prices and implications for smallholder farming households' incomes. This analysis will be done against the backdrop of the somewhat contentious issue of globalisation and its effects of the livelihoods of poor farmers.

3.2 The Value Chain Approach

The value chain approach is a tradition developed from two strands of literature; the business literature on strategy and organisation as used by Porter (1985) and the global commodity chains as promoted by Gereffi (1994) and further developed by Kaplinsky and Morris (2001). While Mitchell et al. (2009) describes the approach as a framework for trying to understand how the real world works, Kaplinsky and Morris (2001) in a more detailed handbook define it as the full range of

activities required to bring a product or service from conception, through the different phases of production, delivery to final consumers and final disposal after use. The value chain approach is complex, so much so, that it has been applied variously to a multiplicity of studies. Wanzie (2009) uses the approach to analyse the production, storage, marketing and consumption of maize to discuss where in the chain improvements can be made while WABS Consulting (2008) uses it to explore the various aspects of the chain with analytical focus on efficiency within the numerous links in the chain. It is somewhat generic in that it lends itself to being used in several ways, depending on the specific needs of the research question at hand. Mitchell et al. (2009) explains that the framework is used by researchers, businesspeople, as well as donors with quite different goals; ranging from improving the competitiveness of localities to reducing poverty among a target group of people.

Increasingly though, the framework has been employed as an analytical tool for understanding the way in which firms and countries participate in the global economy. A number of authors have used the approach, in contemporary times, to study smallholder farmers' efforts to create new markets and develop their income generating capacities. Mitchell et al. (2009) for example, used value chain analysis to examine how the rural poor can, in a practical way, participate gainfully in local, regional and global trading. The value chain framework is particularly useful for analyzing producers – including the poor producers and poor countries – who are trying to enter global markets in a manner which would provide for sustainable income growth. It is well suited for understanding how poor people in rural areas of developing countries can engage, or improve their terms of engagement with domestic, regional and global trade (Kaplinsky and Morris 2001, Mitchell et al. 2009). An important aspect of the value chain, be it *producer-driven* or *buyer-driven*, is coordination. Chain coordination allows *chain integrators* to institute measures to improve their incomes (Mitchell et al. 2009). Other key concepts of the VC analysis are the concepts of *rent and barriers to entry* as well as *power relations in a chain*.

My choice of the value chain framework, therefore, boils down to its utility in explaining how smallholder maize farmers participate in commodity chains at the global level, the price compositions of their maize grains along the chain and, more crucially, its ability to explain the income differentials among the various chain actors, chiefly, based on power dynamics. In spite of usually occupying the lower rungs of the chain, the framework is apt in explaining income dilemmas that smallholder farmers face, and why their incomes might be falling even when prices of their

grains at the global level are on the rise as well as the limited choices they are confronted with in order to make ends meet.

3.2.1 Power Relations in a Value Chain

The power dynamics in a value chain which Gereffi (1994) termed *governance*; helps transform it from a heuristic to an analytical concept. Kaplinsky and Morris (2001) argue that Gereffi's contribution to the framework is important because it enabled advances to be made in the analytical and normative usage of the concept, particularly by virtue of focusing on the power relations embedded in it. Gereffi (1994) demonstrates that many chains are characterized by a dominant party (or parties) who determines the overall character of the chain, and as lead actor(s), becomes responsible for upgrading activities within links and coordinating interaction between and among the various links. Governance ensures that interactions along the chain exhibit a semblance of organisation rather than being simply random. Value chains are governed when parameters requiring product, process, and logistic qualification are set which have consequences up and down the chain encompassing bundles of activities, actors, roles and functions along the chain.

Furthermore, Kaplinsky and Morris (2001) explain that the power which any party may possess in the value chain may paradoxically be reflected in two seemingly contradictory attributes. The first arises from the power to force other parties to take particular actions and the second reflects the capacity to be deaf to the demands of other actors in the chain. Power asymmetry is, thus, central to value chain governance because it recognizes the fact that economic power or the lack thereof, determines who ultimately wins or loses. This is so because the sheer economic power of more powerful actors compared to more vulnerable groups enables the former to set the rules of the game that governs the chain and how this constraints the choices of the latter. Mitchell et al. (2009) concur when they point out that in the final analysis, brute economic power is used by the more powerful group to extract more value from the chain.

Kaplinsky and Morris (2001) enumerate two channels through which power can be exercised in a chain; by ensuring consequence along the chain and by actively managing the operations of the links within the chain so that those consequences are met. They also posit that, power and governance cannot be assumed to be static and centrally located and that there are a variety of nodal

points of governance and coordination functions within a chain which may change over time and space as the power accorded to different actors shift within a particular chain. While governance usually is concerned with setting parameters which delineate the conditions of participation in the chain, in recent times, the critical factors have come to include quality, price and delivery reliability (Kaplinsky and Morris 2001). Thus, the most effective role that producer associations can play ought to involve assisting chain participants to meet these requirements. The exercise of power and governance of a value chain, however, comes in two main forms; those cases where buyers exercise greater control and those in which producers play the key role in the chain.

3.2.2 Producer- and Buyer-Driven Value Chains

The ultimate aim of power in a chain is control and in this direction, Gereffi (1994) distinguishes between producer-driven value chains and buyer-driven value chains, explaining the former as where key producers in the chain, generally commanding substantial resources and vital technological know-how, play the role of coordinating the various links and the latter as those chains in which critical governance role is played by a buyer(s) at the zenith of the chain. In producer-driven value chains, producers take responsibility for assisting the efficiency of both their suppliers and customers while the reverse is the case in buyer-driven chains.

Kaplinsky and Morris (2001) posit that buyer-driven chains are more characteristic of labour-intensive industries and more relevant in developing countries. This is partly because of the relative isolation of such producers due to their production on limited scales and the fragmented nature of the marketing of their produce leading to diminished bargaining power. It is, therefore, not surprising that smallholders in developing countries, such as Ghana, usually find themselves entangled in buyer-driven chains. Gereffi (1999), as an addition to his earlier postulation of the above distinction also argues in a controversial way that producer-driven chains are a reflection of the archaic import substitution industrialisation regime while buyer-driven chains are more outward-oriented and globalisation inclined system of networked production typical of the 21st Century.

3.2.3 Barriers to Entry and Rent

At the crux of the framework is its focus on the how producers enter and then participate in wider markets. These wider markets are relative, in that, they may range from a district market, regional market, a national market, to the global economy. The concept of barriers to entry is the key determinant of the distribution of returns from participation. Kaplinsky and Morris (2001) explain these barriers serve as encumbrances that enable chain integrators and actors to protect themselves from competition and that this ability to insulate activities can be encapsulated by the concept of rent which arises from the possession of scarce resources.

The ability to erect these barriers takes several forms including technological ability, organisational capability, skills and marketing acumen. In this regard, the primary barrier to entry for smallholder maize farmers to higher links of their current chains or even entry into more profitable chains could be inadequate financial wherewithal which middlemen and other upstream actors possess and are able to insulate their activities, thereby accruing economic rents in the form of supernormal profits. This is due, largely, to the advantage of monopoly or at the very least, oligopolistic conditions in the maize marketing environment. This also places enormous disadvantage on the smallholder because they usually engage in buyer-driven chains, rather than producer-driven ones and as a consequence, they do not have adequate bargaining power. In essence, the middlemen possess certain attributes which enables them to charge enormous rent while the smallholders, who are the primary producers, do not possess such attributes and so inexorably see their earnings plummeting.

Furthermore, Mitchell et al. (2009) argue that there is a difficult trade-off at the heart of a pro-poor value chain development as far as barriers to entry goes. They point out that, on the one hand, barriers to entry to participate and to gain from this participation is undesirable because they disproportionately exclude the poor and more vulnerable groups of society such as smallholder farmers while on the other hand, they are critical because without them everyone and anyone can participate in a chain thereby eroding the rent that can be earned by virtue of participation. They then surmise that the trick is to identify those barriers within the grasp of the target group to overcome, and where barriers are being created, to set the barriers to entry just high enough to allow participants to gain without setting them so high that only the non-poor can participate. The concept of rent also provides an important analytical vehicle to explain why some activities in a chain are

well-rewarded while others are not, with barriers to entry being the central tenet which limits competitive pressures so that in mapping the distribution of incomes, profits have to be the focus since the greater the barrier to entry, the higher the level of profitability (Kaplinsky and Morris 2001).

As the graphic representation below depicts, smallholders, at the lowest end of the chain, face the highest barriers to entry to higher and more productive links in the chain as well as have the least power among all the chain actors. Also, notwithstanding the apparent complex nature of the maize value chain as shown below, the links which are germane to this study is the quartet of *maize traders*, *rural assemblers*, *producer associations*, and *smallholder maize farmers* and how their dynamic interactions influence the incomes and living standards of smallholder farmers. While this may be an oversimplification of the interaction of smallholders with other actors in the maize value chain, the framework itself is useful in a number of ways.

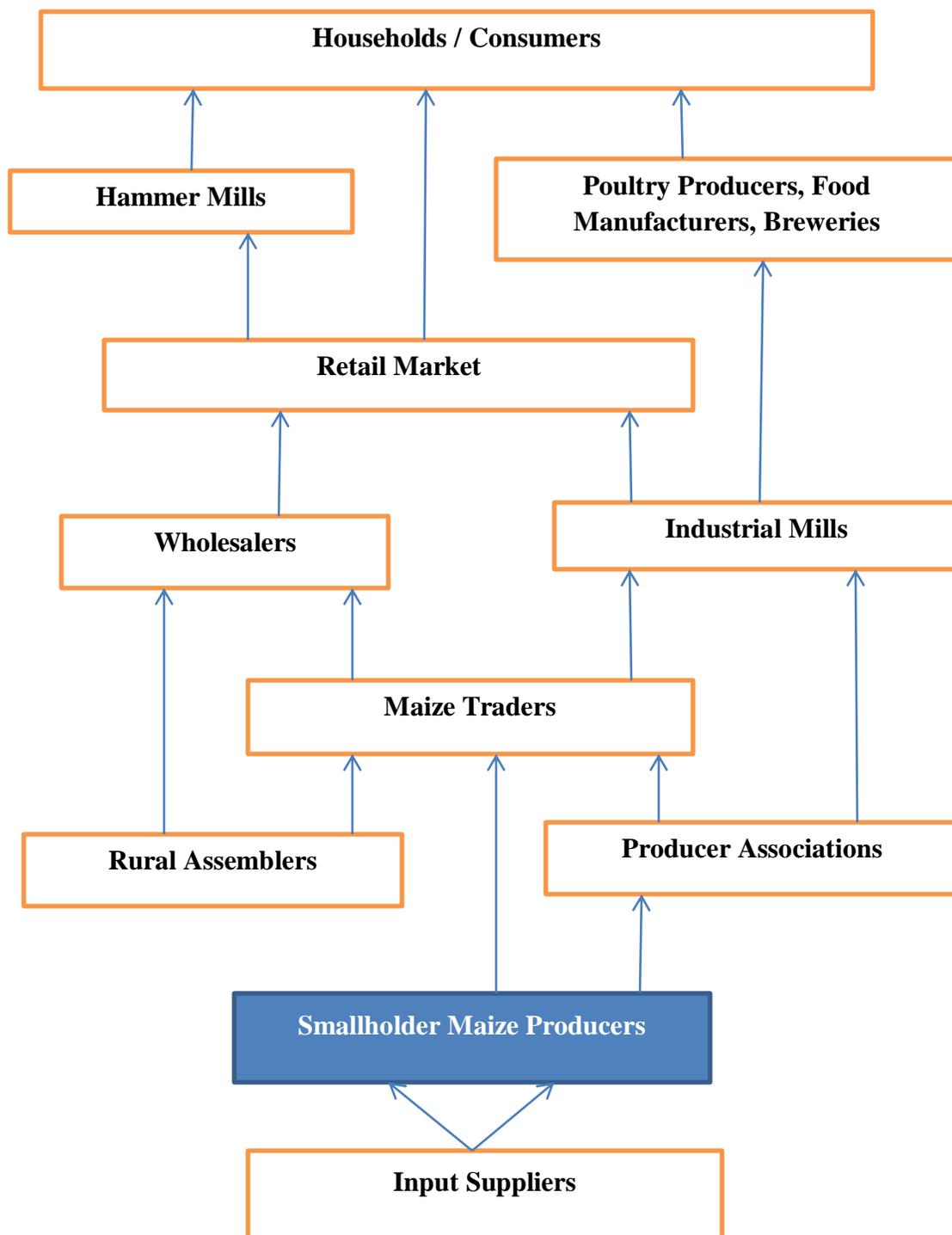


Figure 2: A graphic representation of the maize value chain

Source: Adopted from Wanzie (2009, p.22) description of the maize value chain in of Ghana in 2008.

3.2.4 Usefulness of the Value Chain Framework

While it may be argued that the framework falls short in terms of its abstraction and empiricism, Mitchell et al. (2009) posit that the approach is rooted in the real world of production and focuses much less on overarching theory and unrealistic assumptions, and more on a practical approach towards supporting specific target groups to access value chains and that this is useful in a study to help improve the competitiveness of smallholders to reduce poverty. Kaplinsky and Morris (2001) explain that it does this by focusing on the manner and trajectory in which producers enter and then participate in wider markets - be they local, regional, national or international markets. Their mode of insertion will determine, to a large extent, the distribution outcomes of benefits, particularly incomes, among chain participants, as well as the capacity of individual producers to upgrade their operations, and thus, launch themselves onto a path of sustainable income growth. This is important in understanding the dynamics of income distribution among smallholder farmers.

Also, WABS Consulting (2008) find the framework apropos in analyzing data collected at the farmer level as well as analyzing more subjective data based on smallholder maize farmer and traders' perspectives. It enabled their study to look at the various aspects of the maize production chain ranging from seed sourcing, planting agronomy, harvesting, market demand and management with analytical focus on efficiency. More crucially, the framework was useful in analyzing farmer-price-risks issues which is quite germane to smallholders in particular. Mitchell et al. (2009) postulate that value chain is more useful than orthodox theory in explaining why marginalized groups such as smallholder maize farmers face barriers to trade and how they can overcome these barriers.

Furthermore, value chain analysis overcomes a number of important weaknesses of traditional sectoral analysis which tends to be static and suffers from the weakness of its own bounded parameters. For in restricting itself to sectoral analysis, it struggles to deal with the dynamic linkages between various productive activities that go beyond that particular sector, whether they are of an inter-sectoral nature or between formal and informal sector activities (Kaplinsky and Morris 2001). This inter linkage between formal and informal sector activities is particularly important as increasingly, more workers, especially in developing countries move, often seamlessly, between the two sectors. This enables the analysis to be made in an integrated manner rather than view them as disconnected spheres of activities.

Additionally, as a result of its ability to disaggregate the nature of returns throughout the various links in a particular chain, it can help policy makers formulate the necessary policies to protect particularly threatened links such as smallholder maize farmers and/or facilitate upgrade of other links in order to generate greater returns. Kaplinsky and Morris (2001) go a step further to explain that the strength of the approach lies in its ability to help understand the benefits and drawbacks of specializing in the production of a particular product rather than service and why the way in which producers are connected to final markets may influence their ability to gain from participating in those markets. This is especially useful as the conclusion of the MDGs draws closer with poverty still endemic among smallholder farmers particularly in developing countries, notwithstanding the substantial progress touted to have been achieved in the struggle against poverty.

The debate about globalisation is invariably polarized between two schools: one which argues that globalisation has been beneficial to the poor and the other, which is of the view that globalisation has been inimical to the welfare of the poor. Kaplinsky and Morris (2001), however, point out that this appears to be an oversimplification of the issue since it is less a matter of globalisation being intrinsically good or bad but more about *how* producers insert themselves in that chain and that the overriding concern of this approach is how this is put into perspective.

3.3 Poverty Traps and Race to the Bottom

Gore (2003) defines a poverty trap as a situation in which poverty has effects which act as causes of poverty and thus lead to a vicious cycle of circular and cumulative causation in which poverty outcomes reinforce themselves. The concept of poverty traps assumes that there is a poverty threshold which people who find themselves have little chance of rising out of and below which they would continue to wallow in extreme poverty unless and until there is an external help to push them upwards. Those caught in this low-level equilibrium trap (Carter and Barrett 2006) inadvertently or otherwise, make choices that reinforce their position in these poverty equilibriums. Poverty can trap entire nations and groups, as well as it does individuals. The 2008 Report by the Chronic Poverty Research Centre (CPRC) explains that at the individual and household levels, poverty traps enmesh people in a cycle of material deprivation, pointing out that achieving the first MDG of halving poverty by 2015 would still leave over 800 million people living in absolute poverty. Though several

studies have touted the dramatic declines in levels of poverty in the past couple of decades, the general trend is of persistence of poverty. Sampson and Morenoff (2006) argue that such general trends lend credence to the view of poverty traps possessing durable features.

Gore (2003) posits that globalisation necessitates a shift in the framework for poverty analysis so that poverty at the household level is analyzed in a global context and that the coexistence of chronic poverty and increasing globalisation does not necessarily mean that the latter causes the former because the effects are not the same across the board. Rather it means that what is happening at the household level is increasingly related to what is happening elsewhere. Since there are both gainers and losers in the globalisation process and the latter group is not limited to non-participants, it is important to look at the mode of insertion of the losers (Kaplinsky and Morris 2001, Gore 2003).

This is against the backdrop of ever increasing integration in the global economy. The increasingly liberalized nature of most national economies means that, there is no choice to be made as to whether to participate or not in this globalisation process. Kaplinsky and Morris (2001) aptly sum it up when they postulate that the key policy issue is not whether to participate in global markets, but how to do so in a way which provides for sustainable income growth, as a particular problem for poor producers appears to be that they seem to experience more of the disadvantages of the global trade rather than its advantages.

Where smallholder maize farmers do not participate in the market, they *lose from both sides* in the globalisation process (Kaplinsky and Morris 2001). This is because they lose out on the benefits of increasing their incomes while, by virtue of globalisation and liberalisation; they are unavoidably hit with increases in general consumer prices. Even where they do participate, they usually find themselves at a disadvantage due to the worsening terms of trade that agricultural commodities usually face on the global market compared to other consumer goods. This leads to a situation where their incomes are almost always not enough to allow them the same level of standard of living. This situation of *squeeze from both ends* will lead to a situation Kaplinsky and Morris (2001) referred to as ‘race to the bottom’, where they fall into a poverty trap and find it almost impossible to extricate themselves from the shackles of poverty. Carter and Barrett (2006) point out that individuals and households who enjoy steady technical change or favourable shifts in their terms of trade can steadily accumulate assets to grow their way out of poverty. Unfortunately, this is not

the case with majority of smallholder farmers. On the contrary, their engagement with larger markets usually comes with worsening terms of trade.

Additionally, the specter of decreasing incomes and increasing cost of living is not helped by some deliberate government policies such as Structural Adjustment. In the post-Structural Adjustment Programme era, the agricultural system in the rural economy has seen the state's level of participation, in terms of fertilizer subsidies and the provision of improved seeds, being largely scaled back, so that smallholder maize farmers are faced with the prospect of competing with their counterparts from developed countries who enjoy substantial subsidies and are able to produce at lower costs. This disadvantage is exacerbated by another form of poverty trap where the smallholder maize farmers have had to sell their produce at the farm gates at prices they have little or no control over soon after harvest only to purchase again later during the lean season at much higher prices (Hella et al. 2011, Dorward 2012a). Juxtapose this on the continuous increasing trend in consumer prices and these smallholder maize farmers become locked in a poverty trap that they find difficult, if not impossible, to break on their own. This squeeze from both ends, further limits their productive capacities leading to less usage of improved seeds and fertilizer application on their farms. This then feeds into lowering their incomes. Dorward (2012b) observes that higher prices, as experienced since 2007/2008, impact differently on various categories of people depending on their level of production, scale of their surplus sales into the market or deficit purchases from the market, as well as their access to capital to invest in production in response to higher prices. The CPRC report (2008) argument that the root of all poverty is powerlessness is noteworthy since under the above circumstance, the more powerful members of society are able to take advantage to further enrich themselves, while the poor are locked further in lower equilibriums of poverty.

3.4 Application to the livelihood of the Smallholder Rural Farmer

The value chain approach is applicable to explaining the differences that occur between producer prices and market prices of maize as well as how producer prices compare to world market prices. The concept of poverty traps will be pertinent in exploring how smallholder maize farmers who unsurprisingly, find themselves at the lowest rungs of the maize value chain, usually are locked in poverty cycle such that, their choices inevitably lead to a continuous decline in incomes, culminating in increasing reductions in the quality of their living conditions. Kaplinsky and Morris (2001) pose

the pertinent question of how it is possible that producers deepen their participation in global markets but end up being worse off than when they started. The challenge that these smallholders face is such that, if they continue to specialize in the primary production at the small scales they are used to in these highly competitive markets, then they will increasingly be subjected to the erosion of their returns.

Smallholder maize farmers are involved in a particular value chain in which the meager quantities of grains that they usually trade in means that they have limited negotiating power in their dealings with other chain actors such as middlemen. Thus, though they are active participants in the chain, they do so, using inefficient and ineffective approaches by acting as individuals with scanty produce when the most effective approach would have been acting in groups. Their incomes are, therefore, significantly reduced by acting individually rather than as a group. Kaplinsky and Morris (2001) explain that sustainable income growth requires the capacity to protect oneself from competition by constructing barriers to entry. However, this ability is virtually non-existent when they market their grains as individuals.

They are further hit by rising cost of living as prices of goods and services are constantly on the increase. They have to contend with these price increases, largely, as a result of the increasingly liberalized nature of the national economy as well as the latter's growing integration with the global markets. While the fluctuations of prices on the world market have important implications for prices for consumer goods that smallholder farmers do not produce on their farms, the largely liberalized nature of the economy means that the price changes are transmitted to them without any buffer or protection. One important area that such price increases have interesting knock on effects on the general price trends of goods and services is the area of petroleum product prices.

A little over a decade ago, prices of petroleum products such as kerosene, diesel, Liquefied Petroleum Gas (LPG) and super in Ghana were heavily subsidized, so much so, that any price increases on the global market, no matter how huge, were immediately taken up by the national budget rather than transferred to the final consumer. The prices of these products individually have important implications for the cost of living, particularly, for the rural smallholder farmer. Kerosene and LPG are the most important source of energy for most rural homes in the country while majority of commercial transport run on diesel and super so that an increase in their prices triggers an automatic increase in transport fares and the cost of carting food items, especially the bulky ones

such as maize grains. This situation was, however, not the case when there were government subsidies on petroleum products. Such subsidies, of course, put a huge amount of pressure on the national budget. On the one hand, some might argue that the social protection that it afforded the poor of society against the vagaries of the global market was worth the burden. On the other hand, opponents to government subsidies might point out that it is not feasible and sustainable in the long term. It appears the latter group gained the upper hand because of the eventual implementation of the *deregulation policy* in the petroleum sector. This policy not only removed government subsidies from petroleum products but also ensured that local ex-pump prices moved in tandem with world market prices.

The constant depreciation of the local currency, the Ghana Cedis (GHC), is exacerbating this situation. In the last five years alone, the Cedi has depreciated against the Dollar by as much as 75 % from 1 Dollar to 1.33 GHC in January 2009 to 1 Dollar for 2.32 GHC in January 2014.⁶ Since almost all products on the international market are traded in the Dollar, the depreciation of the GHC means that even where prices on the international market remain stable, those on the local market due to deregulation, continue to rise. This has culminated in the situation where, according to the National Petroleum Authority, the price of a gallon of gasoline in Ghana has more than quadrupled from 0.55 GHC in March of 2000 to as much as 2.33 GHC by December 2013.⁷ As stated earlier, fuel price is one of the most important, if not the most important, determinants of the cost of living due to its forward and backward linkages to several aspects of life. This linkage is particularly evident in Ghana, so much so, that prices of goods and services are automatically reviewed each time there is fuel price adjustments and this is becoming increasingly more frequent in recent years.

More importantly, contrary to the general trend in the cost of fuel and other consumer goods, maize prices are not increasing at similar pace, if at all, in the same time span. Smallholder maize farmers whose main source of income for livelihood is maize farming usually attempt to compensate for the diminishing incomes by increasing their area of cultivation. This has, however, not been a viable option in recent times due, largely, to dwindling soil fertility and shrinking plot sizes available. This is leading to *immiserizing growth* (Bhagwati 1987, Kaplinsky and Morris 2001); a

⁶ <http://www.xe.com/currencycharts/?from=USD&to=GHS&view=5Y>

⁷ <http://creativefactorygh.com/npa/downloads/statistics/QawiRLH.xlsx>

situation where there is increasing economic activity or output of a product but falling incomes. This happens when the benefits of growth is more than offset by the worsening terms of trade at the level of a value chain that a particular actor interacts with the chain. This implies that even where smallholder maize farmers experience growth in incomes, this growth is slower than that experienced in their expenditures.

Kaplinsky and Morris (2001) conclude that the key issue then is not whether these smallholders should participate or not, since that decision has already been made for them through such liberalisation policies such as deregulation, but rather *how* they should participate in these chains in order to protect their income streams. This is important because if they get it wrong, they are likely to fall into poverty traps and enter a *race to the bottom*; that is a path of immiserizing growth in which they are locked into ever-greater competition and reducing incomes in the face of ever-increasing cost of living. This will inevitably lead to more and more smallholders falling into poverty and those already below the poverty line having their situations deteriorating.

4. RESEARCH METHODOLOGY

4.1 Introduction

Developing a good research design is *sine qua non* for a good research work. While identifying how one intends to conduct one's research is a quite demanding aspect of research writing (Monk and Bedford 2010), it is also quite rewarding. This is because, it gives the researcher a framework within which to operate, providing a much-needed guideline and some form of manual with regards to the kind of data to collect in order to satisfactorily answer the set research questions. Under research methodology, I discuss the method and techniques I employed in the creation of the data for the study. This will, therefore, cover issues ranging from my choice of method and the kind of data acquired, choosing my research assistant and informants, and the possible effect that they may have had on the data, to ethical issues and reflexivity on my part as a researcher as well as the storage and transcription of the data and challenges encountered while in the field.

4.1.1 Pre-Fieldwork Preparation

The essence of pre-fieldwork preparation cannot be overestimated. Quite apart from preparing the researcher for the fieldwork proper, it also makes the researcher feel prepared and this is useful when entering the field. I did this by, first of all, reading a number of articles on the subject I was researching on while still in Oslo. This gave me further insights on the topic, which I may otherwise, not have had. I also took opportunity of the two weeks' free time I had before my journey to Ghana, to make initial contacts with officials in the District Assembly where I would conduct the data creation as well as the NAFCO who I felt could supply valuable secondary data on the research topic. This proved quite useful eventually because though the response rate was not good enough, it helped me in deciding what would work and what would not.

I originally earmarked the period between June 15, 2013 and August 15, 2013 as the fieldwork period. During the first week, however, I visited the Geography and Resource Development department of the University of Ghana's library to source for more information on the topic. The rationale was to get as much knowledge about the research area and topic as possible in order to pose relevant questions.

4.2 Choice of Research Method and Techniques

Having decided on my research questions, I employed the *qualitative method* in creating primary data for the study. As Hesselberg (2013) points out that the objectives of the research and the research questions are the main determinants of how to conduct fieldwork. The qualitative method was the most appropriate in this situation since I was seeking to answer a question of *how* processes work in a particular situation as well as *why* they behave the way they do, and what produces changes in the actors and the context in which they are located (Bradshaw and Stratford 2010). In this case, I was seeking to answer how local producer prices of maize compared to the prices of consumer goods that their households usually need, and more importantly, *how* these discrepancies could affect their living conditions. Furthermore, Hesselberg (2013) points out that a qualitative method provides relatively substantial information on few units. It also allows greater flexibility which allows the researcher to follow interesting leads (Baulch and Davis 2010) culminating in what Geertz (1973) referred to as *thick description* of the phenomena under discussion.

More importantly, the qualitative method places more value on the views and beliefs of the informants concerning their socio-economic situations as well as *why* and *how* they believe they have come to find themselves in those situations. Winchester and Rofe (2010) for instance, explain that qualitative research methods are intended to elucidate human environments, individual experiences and social processes within a variety of conceptual frameworks. This is in sync with the view of Sayer (1992) that the behavior and experience of an individual may be determined not so much by their personal characteristics as by their position in the social structure as well as their associated resources. This implies that, in qualitative methods, value should be placed on *informants' view of facts*, instead of, say, documentary sources or the researcher's view of what is true.

The qualitative method was also useful in helping to explore their adaptation mechanisms by virtue of its open-ended nature and flexible design. For instance, the original intention of the study was to explore how the living standard of the smallholder maize farming households was affected by the squeeze from both ends. The flexible design of the qualitative research, however, allowed me to incorporate the households' adaptation strategies into my interviews while in the field. This, I hoped,

would further enrich the findings. The situation would have been starkly different had the study employed the quantitative method.

Primary data creation was done mainly in the township of Worawora in the Biakoye District of the Volta Region of Ghana. This notwithstanding, I also held informal conversations with maize farmers from surrounding communities of Atonko, Apeso Kubi and Tapa Amanya in my quest to further enrich the study. But for constraints of time and finance, I would have extended my fieldwork to these surrounding communities. Having said that, my interest was not the communities per se, but rather, smallholder maize farmers. My choice of Worawora, located in the Middle Belt of Ghana, was largely, arbitrary. The Middle Belt of Ghana is well-noted for maize cultivation largely as a result of favourable climatic conditions. More pertinently, Worawora has all the key characteristics of a typical smallholder maize farming community. Besides, gaining access was relatively easier due to the fact that I grew up in that community.

4.2.1 Choosing Informants and Research Assistant

The decision of selecting who to talk to has a significant influence on the data created and hence, the quality of the study and the findings thereof. This is because, the informants - in this case, smallholder maize farmers – are the primary source of the data used for the study. The issue of how good a qualitative study is, to a large extent, is dependent on the richness and variety of the experiences of the informants. Herein lays the importance of a careful selection of informants. In agreeing with Hesselberg (2013) therefore, I think the term *sampling* does not do justice to how I selected the informants for the study. This is because I purposively and strategically selected smallholder maize farmers who would enrich the study with their rich and *diverse* experiences and unique positions with regards to maize farming in the study area.

The selection of the informants was done with the assistance of other informants as well as the research assistant while bearing in mind Hammersley and Atkinson (2007) caution that the researcher

“must retain the leeway to choose candidates for interview. Otherwise, there is a grave danger that the data collected will be misleading in important respects, and the

researcher will be unable to engage in the strategic search for data that is essential to a reflexive approach”(p.104).

By asking fellow informants for names of other smallholders, I, in a way, also employed the snowballing technique of informant selection, though in seeking to heed the warning of Cloke et al. (2004) of the possibility of informants introducing other informants who are like-minded, I specifically asked them for other smallholders who are doing something different from themselves. This for instance led to an informant introducing me to another informant who sells his corn while they are still fresh on the farm, and the latter giving insightful information about how he was adapting to unfavourable prices of maize.

The original plan was to interview a total of 30 informants but due to limitations of the duration of the fieldwork, that number was whittled down to a more manageable 12 smallholder maize farmers, with at least 2 from each of the following sub-categories: those who have been cultivating maize for less than 10 years and those who have been in it for more than 10 years, those who cultivate on their own plots of land and those who lease lands on which they do the maize cultivation, and finally, those who sell to middlemen and those who sell directly to large maize trading companies and the buffer stock company. Due to a number of factors which would be discussed later, the last category of maize farmers was largely non-existent in the study area. All maize farmer-informants were necessarily active maize farmers in the last 5 years since this is the period the study sought to explore.

The choice of a research assistant is equally, if not more, important to the reliability and validity of research process. This is because, a *wrong* choice of an informant may taint only the data he/she provided while a *wrong research assistant* could taint all the data collected for the study. Herein lays the importance of choosing the person who would offer the best service of a research assistant while affecting the data created the least. My choice of a research assistant was, therefore, someone literate enough to be able to operate the digital voice recorder and knows the study area well enough to offer useful suggestions and yet one in whose presence the informants would feel comfortable enough to share their life experiences since this could also influence the data created in no small way. There was the added bonus of his ability to assist me secure access to the study area by virtue of his connections to the traditional authorities and his knowledge of the local customs.

The specific qualitative tools used in the creation of primary data for the study during my fieldwork were in-depth interviews, informal interviews, group discussions, field observations, and the use of field notes. These primary sources of data were complemented with secondary data obtained from the Jasikan District Assembly and the district offices of the National Buffer Stock Company.

4.2.2 In-Depth Interviews

The in-depth interview was the principal qualitative research technique used to create data for the study. Maccoby and Maccoby (1954) defined an interview as a face-to-face verbal exchange whereby an individual, the interviewer, attempts to elicit information or expressions of opinion or belief from another person or persons. The fact that it is in-depth implies that it goes beyond just having face-to-face chat to the interviewer actively seeking information on the experiences and beliefs of the interviewee in a more detailed manner. My choice of the in-depth interview as the principal tool was largely influenced by Dunn (2010) assertion that when a method is required that shows respect for and empowers the people who provide the data, then interviewing is the right choice, explaining that, in an interview, the informant's view of the world should be valued and treated with respect.

There were 12 initial interviews with the key informants, who are smallholder maize farmers, each lasting between 30 – 45 minutes and then repeat interviews with 4 of them who seemed to have additional information and were keen to divulge such insights. After the repeat interviews, I chose to interview 2 of them for a third round of interviews, with one of them even offering to be contacted on phone if I needed any additional information. Apart from smallholder maize farmers, I also interviewed 2 middlemen who buy maize grains from the farmers and then sell to maize marketing companies or even sell back to some of the farmers who are net-buyers of maize grains. Speaking to this group of people gave me further understanding into the pricing of maize and the trends for the past couple of years.

The interviews were conducted using an interview guide. This afforded me the opportunity to ask open-ended questions and the flexibility to ask follow up questions where necessary. This ability to follow interesting leads proved quite useful in the end. As the name suggests, the interview guide

served as a template to help me redirect the focus of the conversation to ensure that I covered the relevant areas while also giving me the latitude to allow the dialogue to follow a natural course. Using in-depth interviews with the concomitant flexibility was advantageous in stimulating germane issues that would not have come to the fore if I were using any other data creation tool. It also enabled me to view the world of the smallholder maize farmer from their point of view with regards to how their incomes are affected by the price trends, and more importantly, how they have been coping with this squeeze from both ends.

Another important challenge I encountered during the interviews that could have implications for the findings of the study was the perception of some of the informants, particularly one of them, that I may want to invest in the maize business. This led to the situation where he continuously attempted to impress upon me to invest in maize trading, insisting that it was good business and he could help facilitate my involvement in that venture. I had to take my time to carefully explain that I was only doing the interviews for my thesis work and that I had no interest or intention, at all, of going into the maize trading business.

Furthermore, other smallholder maize farmers reasoned that, as ‘a son of the land’ who has been to the white man’s land and back, I was asking about their income and livelihoods challenges so that I would assist those who needed help. As a result, those not included felt left out, while those I was interviewing were initially telling me what they thought I wanted to hear. It took detailed explanations of the rationale behind the study, for a few of them, the repeat interviews before they appreciated the true purposes of the study and the need for them to provide true and accurate accounts of their experiences.

Most of the interviews with the smallholder maize farmers were held in their respective homes. This proved helpful in ensuring that the informants felt comfortable enough to have a smooth conversation with me. The downsides to holding interviews in informants’ homes are the frequent interruptions from spouses and children, and more crucially, neighbours listening in. On one occasion, an informant’s toddler was crying and the wife was busy cooking in the kitchen and so I had to politely ask the husband who was my informant to assist catering to the needs of the child. This disrupted the interviewing and we had to begin after about 30 minutes. During another interview, verbal exchanges nearly degenerated into a serious quarrel between the man and his wife over the latter’s comment that the husband (informant) not doing anything and so should be cleaning

the local rice of little stones so that she could use it to prepare dinner. On both occasions, I had to take on the role of a mediator and peacemaker, make some jokes to diffuse the tension, and on the latter instance, reschedule the interview to a later date.

Another downside of interviewing informants in their homes is the issue of inquisitive neighbours gathering around the informant and me to listen to what was going on. This may not be a totally bad thing as in some cases these other people made useful contributions particularly with regards to the recollections of informants of maize prices. This could have influence on the reliability of the study. Neighbours listening in could also have negative effects on the study as Hesselberg (2013) points out, explaining that it becomes difficult to obtain critical information and is undesirable, especially if some of those listening in would be interviewed later on. The above could have influence on the data created and the eventual findings of the study. It was quite a conundrum because asking them to go away could have been misconstrued as being ill-mannered. Besides, I did not want to alienate any of them, especially since they were potential informants. On those few occasions that others listened in, I was careful to avoid asking questions that informants would prefer to keep from their neighbours such as issues concerning their incomes. Additionally, most of the people felt flattered when I persuaded them not to listen in because I might want to interview them but if they listened, I would not be able to do so without compromising the integrity of the study. It was important that I employed tact in doing this because I recognized that a field researcher who is perceived as being rude, needless to say, would not be able to access the necessary data to write a good thesis.

Another set of the interview guide was designed for shop owners in the study area who stock some consumer goods that farmers named as the kind of goods that they spend most of their incomes on. I spoke with 3 shop owners in this regards, 2 of which traded in consumer goods while the last one was a shop that deals in farming implements for smallholders. The owner of the latter was also a maize farmer and so the interview with him was quite revealing. The main purpose of this guide was to gain insights into the purchasing behavior of the smallholders in the course of the season and over the past couple of years as the prices of their grains fluctuated. I also conducted face-to-face interviews with 2 middlemen with the aim of getting further insights into what goes into the pricing of maize at the beginning of every season. This aspect of my fieldwork confirmed, to an extent, part

of my hypothesis for this study that smallholder maize farmers have little or no influence on the price that their ,maize grains sell for.

4.2.3 Informal Interviews

I also made use of informal interviews. These were, largely, spontaneous and so unrecorded conversations in which the interview guide was not used. Notwithstanding the importance of the guide in the interview process, my use of informal interviews served important purposes, especially for informants who might have been overwhelmed and discomforted by the formality of the in-depth interview due to the spontaneous nature of informal interviews. They are informal to the extent that they are not scheduled, with informants ‘being read their rights’ and so are apt to express their opinions. Though the use of informal interviews was limited, they served as a good source of germane information that led to other interesting aspects of the study that were not thought of beforehand.

For instance, I was in the process of striking an interview deal with a middle-aged smallholder maize farmer who was on his way to his farm when a *Koko* seller a few meters away overheard our conversation and retorted that maize prices are so bad this season, to the extent that more farmers are moving away from maize cultivation and going into rice farming. This comment piqued my interest to the extent that after agreeing a date and time with the maize farmer, I went back to the woman to explore that line of conversation even though she was not supposed to be one of my informants.

4.2.4 Group Discussions

I also employed the tool of group discussions in the data creation during my fieldwork. Cameron (2010) likens this kind of group discussion to a university tutorial group meeting and defines it as involving a small group of people, usually between 6-10 people, discussing a topic or an issue defined by the researcher. An important characteristic of the discussion group, which served to bring to the fore both points of agreement and disagreement, was the interaction between and among participants. I conducted 2 group discussions, each comprising 6 participants. In terms of their membership, one of the groups was comprised, exclusively, of smallholder maize farmers who were

also interviewed for the in-depth interviews. The rationale was to generate further insights by allowing participants to respond to the contributions of others. I also ensured diversity in the groups by ensuring that, at least, a member of each of the 6 sub-categories named earlier was represented to enrich the discussions. The neutral location of the local community library was also ideal for its central location and serene atmosphere which was conducive for the purposes. I deliberately scheduled the meeting on a Thursday since that is the taboo day when members of that community are proscribed from going to their farms.

I also conducted a second group discussion which comprised 2 farmers with rich experience in maize cultivation and pricing, the sub-chief of the town in-charge of farmers' affairs, 2 maize buyers and a farm implements shop owner. This second group was quite useful because it, among other things, highlighted the delink between 'set prices' how much maize actually sells for and how the maize business is actually conducted as well as the differing views on who is to blame for price skewing.

Generally, the discussions in both groups went on smoothly with both set of participants given adequate time to express their views, opinions and experiences, notwithstanding disagreements on some of the issues. Most of the relevant topics that I earmarked for the group discussions were adequately dealt with. I offered refreshment at the end of both meetings. It is important to note that these meetings ended peacefully without any animosity, as far as I could tell.

4.2.5 Field Observations

Observation was another qualitative tool I employed during the data creation process in the field. This involved taking visual stock of maize farmers' homes to gain further insight into their economic situations in terms of the kind of 'luxuries' they could afford and those that they could not. This kind of passive observation is distinguished from participant observation by Hesselberg (2013) who explains that the latter, necessarily, involves some degree of participation on the part of the researcher in the activity being investigated.

The initial idea behind the observation portion of the fieldwork was to observe the informants' economic and/or social circumstances in connection with other variables such as when they sell their grains after harvest, whether they cultivate grains on their own plots or on rented plots.

I, for instance, observed that one of the easiest ways to ascertain whether a smallholder maize farmer was doing quite well in the community was whether or not they owned a television set and more so if they own a Multi Television Digital Satellite Receiver, commonly called Multi TV. This satellite dish enabled owners to receive as much 28 channels as against just 1 for owners of ordinary television sets due largely to the mountainous topography of the region. Through observation, one of the things I found out was that farmers who could afford Multi TV are usually those who had other professions or tradecraft to supplement their maize farm incomes or those who had other reliable sources of incomes other than smallholder maize farming.

Throughout the fieldwork period, I kept a fieldwork diary in which I recorded observations, reflections, and other data generated through informal interviews and other everyday observations on individuals who I felt could help enrich the study. Apart from these primary sources of data, I also made use of secondary data sources to supplement the primary data created.

4.2.6 Secondary Data

In addition to the above enumerated primary data creation tools, secondary data sources also served as useful sources of pertinent information for the study. This is in line with the argument by Hammersley and Atkinson (2007) that in addition to being of value in stimulating analytic ideas, such documentary sources can also provide information about the settings being studied or about their wider contexts.

There were two main challenges that concerned officials in state institutions that I had to contend with. The first was the non-response from my initial contact. Though I had sent emails to some of these officials through email addresses published on the respective organisation's websites, none of them responded. I got to the field only to realize that some of them did not have access to those email accounts and the few who did, rarely checked their emails. As far as they were concerned, any serious researcher would personally come to their offices to request for information rather contact them through email. The fact that I had made the effort to contact them, however, somehow, facilitated the process.

The second was those officials requesting for financial incentives before they would furnish me with some useful secondary information. The problem is that, whatever money that is given

under such circumstances is not official and could be seen as a bribe to a public officer and yet they demand for money without stating a specific amount. The perception is that, if am rich enough to sponsor myself in a European university for my Master's degree, then they could, somehow, benefit from my largess. Once I understood their motivations in demanding for these monies, I usually explained that I was only able to attend the University of Oslo with the support of the Quota Scheme. In majority of the cases, they would then shift their demands for cash incentives to seeking for information on how they or their relatives could also get this support. This notwithstanding, they still expected to be given some amount when they eventually furnished me with the needed information. Interestingly, some of these officials had become good friends of mine by the time I had completed my fieldwork, to the extent that we exchanged contacts with the understanding that we would keep in touch.

The above challenges notwithstanding, I obtained important information such as the agricultural profile of the district as well as the demographic and socio-economic profile of the community in which the study was conducted from the planning department of the Jasikan District Assembly. I also gathered quite revealing information from the District Office of the District Agricultural Officer concerning maize farming, production, cultivation area and prices. Some of the information could not have been obtained from other sources. More significantly, some of them corroborated while others, to some extent, challenged or even contradicted, information received from informants. In the situation of the latter, premium was placed on the primary data since reliability of secondary data, particularly, from the South is low (Hesselberg 2013). Furthermore, I obtained valuable secondary information from the websites of state institutions such as the Ministry of Agriculture as well as the Ghana Statistical Service in the form of reports, memoranda and other statistical publications. Generally, however, secondary information complemented the primary data quite well, though due to the low quality of secondary data, its use was limited as much as possible.

4.3 Analytical Unit

The analytical unit is self-evident with regards to the study which seeks to explore implications of local producer price trends of maize on the living standards of smallholder maize farmers. Though the standard of living of smallholder maize farmers is inextricably and inexorably linked to that of their households, I opted to maintain the individual smallholders as the unit of analysis in order to

make it less unwieldy. Using the individual as the analytical unit also brought to the fore, some interesting dynamics in maize farming whereby the husband clears a plot of land for the wife to do all the remaining farm activities while the former engages in other forms of farm or non-farm income generating activities.

4.4 Gaining Access and Seeking Informant Consent

Having been born and having grown up in the community of the study area, I had envisaged that gaining access would be easier. On getting to the field, however, I decided to do things the *proper* - traditional - way. My research assistant recommended we go and meet with the sub-chief in-charge of farmers in the community with 2 bottles of schnapps. This traditional gesture further endeared me to the sub-chief who had been told that a native of the community was reading for his Master's in Norway. This was also helpful as he facilitated the meeting of the second discussion group in which he was a participant, and at the conclusion of which he remarked that it was a source of pride for him that a son of the community was doing a post-graduate degree in Europe.

The individual farmers also felt more comfortable and were more willing to talk knowing that I was doing my research work with the blessings of the farmers' chief. A few of them who knew me as a young boy some years back were also more than willing to provide any information they could once I told them it was to help me attain my Master thesis. This notwithstanding, consent of each informant was sought and obtained before I conducted any of the interviews. During these pre-interview negotiations, I explained to the individual informants what the study was about and that I was going to use the information they might provide purely for academic purposes. I further explained that they needed not to fear that any information they shared with me could be traced back to them individually since I would ensure their anonymity. Also, I explained they had the right to refuse to take part in the study or even opt out at any stage they felt it was necessary and that they were not obliged to answer every question I posed.

Additionally, I sought each informant's permission to use the digital voice recorder on my smart phone in order to enable me to remember the vital information they would share with me. Interestingly, this rather made them feel important and respected. Though I regularly carried credentials that affirm my identity as a student researcher, including the introduction letter from the

University of Oslo, I did not have the necessity to show them because almost all the informants and officials I spoke to took my word for it rather than ask proof of my claims. My personality and demeanour was also useful in bridging any gaps that may have existed between the informants and me. I made it a point to attend social functions such as naming and marriage ceremonies as well as funerals. A few times at such events, I was pleasantly surprised that I would greet someone and they enquire if I was the son of Driver Wahab (my dad's name) who was schooling in Norway. To some extent, this kind of popularity was helpful in gaining the confidence of the informants which helped improve the quality and reliability of the data gathered.

4.5 Issues of Ethics

As aptly defined by O'Connell-Davidson and Layder (1994), research ethics concerns the conduct of researchers and their obligations and responsibilities to those involved in the research, particularly the subjects or informants of the research. Qualitative research techniques, such as interviewing, necessarily occur in uncontrolled societal contexts. The onus therefore, lies on the researcher to ensure that informants are adequately protected on matters of privacy and confidentiality, informed consent, harm and exploitation, and that there would not be any negative consequences for future research.

Seeking permission from the farmers' chief in the community was to ensure that I was welcome to conduct my interviews with the smallholder maize farmers and also to portray a favourable picture of researchers in the view of the chief. I believe this will help any future researchers in obtaining permission to carry out fieldwork in the community. Additionally, the smallholder maize farmers who were the main source of my primary data easily fall into the category of research subjects Finch (1993) referred to as *powerless social groups* whose need for protection of their rights to privacy and confidentiality is paramount. My research work required that I visited most of these farmers in their homes and ask questions about, among other things, their incomes, and livelihoods and how they cope in the face of shrinking maize incomes and burgeoning cost of living. This necessarily implied that I pried into their privacy.

I ensured that I secured their informed consent by explaining, into detail, what the work was about, what was expected of them as informants, and the fact that they could refuse to answer

particular questions or indeed completely opt out of the study. This was sometimes difficult to do because two of the informants were friends with my father and so trusted that I would not do anything to harm them, hence explaining their rights was counterproductive since it rather made them apprehensive. All the same, I assured them that any information they divulged to me would remain in my sole custody and no one else would have access to the information. I also assured them at the beginning of each interview that though I knew the names of some of them, I was not going to attach their names to whatever information they would share with me. This helped in no small way, as one felt secured enough to tell me things about themselves as well as others which they would otherwise not have talked about.

In terms of my role as a researcher in relation to the researched, one could say that I was more of an insider than an outsider in that, as stated earlier, I was born and grew up in that community until after high school when I went to Accra for my university education. As a result, I knew some of them and those that I was too young to have been acquainted with, knew my father and so recognized me as a member of the community. This ensured that accessibility was relatively easier and I was able to gain their confidence enough to share more enriching and insightful information with me than they would have done with an outsider. This helped in no small way to establish rapport between the informants and me. As Dowling (2010) explains, as an insider, both the information you create and the interpretations of it are likely to be more valid and reliable than those of an outsider. Dowling further argues that people are more likely to talk to a researcher freely, and the researcher is more likely to understand what informants say because they share their world view, maintaining that, establishing rapport is more difficult for outsiders than insiders.

The merits and demerits of being an outsider or insider, of course, are relative and contingent on how the researcher portrays himself or herself. This implies that, in situations where am convinced that adopting an outsider position would supply deeper insights, I do so, with due recognition to ethical principles.

4.6 Storage and Transcription of Data

Minichiello et al. (1994) define a transcript as a written reproduction of an interview which took place between the researcher and the informant. Though researchers are often forewarned about how

laborious transcription is, I was further surprised by the cumbersome nature of the process of transcription. There is, therefore, the temptation for researchers to opt for transcribing only portions they feel are relevant to their work. The danger with this approach is that, information that might appear irrelevant to the study at one point during transcription could turn out to be germane and revealing. I decided, therefore, to do a full transcription notwithstanding the arduous nature of the task.

I recorded the primary data created with a field notebook, and more importantly, the digital voice recorder application on my smartphone. This became necessary because I got to the field only to realize that I had left the purpose-built digital voice recorder I bought from Oslo in Accra, and so I had to improvise. This ultimately served as a blessing in disguise because I discovered that the voice recording application on my smartphone was easier and more handy to use than the purpose-built recorder and that the data on the former was safer and more secure since I could automatically upload it into my Dropbox. This gave me a peace of mind because even if I had lost my handset, the data recorded could not be lost.

I also decided to personally transcribe the interviews for two main reasons which are in line with the arguments of Dunn (2010) that since I was the interviewer, I was best placed to reconstruct the interchanges and that transcribing personally would give me the opportunity to further engage with the data once more which provides a preliminary form of analysis. The transcription of each interview contains the initials of the informant, the date of the session, the location and the duration of the interview as well as other background information on the information which proved quite useful during the analysis stage. While transcribing, I usually underline quotations that in my view, aptly explains a particular point which may be used in the final work.

Due to financial, logistical and time constraints, I could not send the transcript back to the informants for vetting, a process Dunn (2010) termed participant checking. This could have further improved the quality of the record. It was, however, useful, that I started the transcription process while in the field as this enabled me to reflect further on some of the questions I was asking and to reframe some of them. This notwithstanding, during the transcription phase, I strenuously ensured that the records are the true reflection of the interviews. My fluency in the Twi language was certainly helpful in the transcription phase of my work.

In a nutshell, qualitative data collection, especially interviewing, in the South is always fraught with challenges, some of which were anticipated prior to the commencement of the fieldwork and as such were not a surprise at all. Those that could not be foreseen I had to deal them reflexively while in the field. Admittedly, despite the fact that I had read widely about the topic and also about qualitative research, in general and interviewing in particular, I was filled with apprehension of actually going into the field and talking to people. This anxiety was quickly banished when I mustered courage and actually started talking to people about my research work.

In summary, the challenges encountered did not significantly impact the quality, validity and reliability of the primary data created and the secondary data collected, to the extent where it would influence the findings in significant ways. This was largely due to careful selection of research techniques as well as my proactive and reflexive approach to dealing with the issues as they arose. The experience of undertaking fieldwork was both physically demanding and intellectually stimulating and yet remarkably rewarding. Generally, I believe I created enough data during my fieldwork to be able to write an academically sound thesis on the topic concerned.

5. COMPARISM OF TRENDS OF MAIZE PRODUCER PRICES AND CONSUMER GOODS PRICES

5.1 Introduction

Having reviewed the literature relating to maize farming in Ghana and assessed that on the value chain framework as well as the methodology employed in the creation of data in the field, the next two chapters will be dedicated to dealing with the substance of the thesis, namely the presentation and analysis of the empirical data created in the field between June and August, 2013 in the study area. The questions that I seek to answer are two-fold: firstly, how does the local producer price of maize compare to the prices of consumer goods that farming households usually need? The second is to find out how differences in these price trends affect the real incomes, and hence, living standards of these smallholder maize farming households?

Following from the above, this chapter will, therefore, begin by tracing the trends of the producer prices of maize grains at the level of the study area as best as possible over the last 5 years, that is between 2008 and 2012. This period is important because of the unique price trends that was experienced at the global level when prices started rising beyond normal levels and reaching their zenith in about the middle of 2012 (FAO 2013). These price trends will then be compared with those of consumer goods that these smallholder farmers spend a large proportion of their incomes on. Apart from consumer goods, the price trajectories of other areas of expenditure such as farm implements and improved seeds as well as expenditure on healthcare and education will be traced within similar timelines to get a clearer picture of the living conditions of smallholders.

It is imperative that these price trends are traced at the farmer-level, rather than, say, at the regional or national level because almost all smallholders sell their maize grains at that level to maize merchants and traders. That is, smallholders engage with the maize value chain at the lowest level, so national level prices might not fairly reflect the incomes that farmers receive from their maize sales. This is particularly so, as data from the field also shows large mark-ups, ostensibly to cover burgeoning transport and other costs that these traders incur. In the same vein, their expenditures are best assessed from prices of goods and services at the level of the study area rather than base it on national estimates since, generally, national level data would be mere averages of prices across the country while prices are known to vary significantly in space, particularly in a

developing country such as Ghana where poor transportation infrastructure contributes immensely to spatial variations in prices of goods and services. The idea is that, comparing these trajectories of prices of maize grains which indicate incomes on the one hand, and prices of goods and services on the other hand, which indicate expenditure at the farmer level, will give a clear picture of their livelihood dynamics. It must, however, be pointed out that even among smallholders who consider maize farming their main occupation, multi-activity⁸ is pervasive.

5.1.1 Characteristics of the Maize Farmer

The importance of maize farming in Worawora is exemplified by the observation that almost all inhabitants of the town engage in some form of maize cultivation, at least once a year. This includes even people who do not consider themselves as farmers. Whatever the age, gender, ethnicity, educational attainment or marital status, everyone is linked with the maize crop, one way or the other. The manner of their involvement is the point of difference. It is not uncommon for late teenagers, even while in High School, to have a quarter of a hectare or sometimes less, as their own maize farm, proceeds from which they have absolute control over. This holds for both males and females but in the case of the latter, where they are not able to clear plots by themselves, their fathers or older brothers do so for them. This responsibility of initial clearing of the plot passes from siblings and fathers to husbands when they marry. A middle-aged female smallholder explains that: *“Before I got married, my elder brother and father would usually team up to clear a small portion of land for me and then I would do the rest of the activities from planting to harvesting. However, since marriage, my husband did the initial clearing for me but since his lorry accident 3 years ago which affected his legs, I have had to pay others to have the plot cleared”*. She has been engaged in maize farming for almost 2 decades and in that period, there has been only a couple of seasons that she was not in town and so did not cultivate the crop. Another middle-aged smallholder, who has been a maize farmer for at least 15 years, explains that he took a break only to go and learn vehicle mechanics in Kumasi but since his return, maize farming has proven too important to ignore, notwithstanding its notable challenges.

⁸ Engaging in other activities that generate incomes for such smallholders (Hesselberg 2013). These activities may be on-farm or off-farm. This multi-activity on the part of smallholders tends to diversify income sources and so serve as insurance in case of crop failure but could also be as a last resort to inadequate incomes from their farms.

At Worawora, the average size of a maize farm is slightly larger than the national average or the literature position of less than 2 hectares. However, the question of what size of maize farm people maintained depends largely on whether they are farming on their own or family-owned plots or leased plots which in turn are influenced, to a large extent by the farmer's ethnicity. The *Akans*, who are the first settlers of the town are considered the natives and have right to portions of land by virtue of their familial lineages. While men usually cultivate maize on lands inherited by their fathers, females have the option of cultivating on their fathers' lands or that of their husbands. An older female smallholder maize farmer explains that she used to prefer her father's land because it was closer to the town itself, but now she uses her husband's family land because the husband has less number of siblings and their land provides more yields because of its proximity to the *Kabo* River, a tributary of the Volta Lake. The downside to this switch, she points out, however, is that, her farm is now further away and she spends almost 2 hours walking to and from the farm.

The *Akans*, usually farming on their own lands, cultivate smaller farm sizes than non-*Akans*. This is because, they do not share the farm yields with others. This is in contrast with the other ethnic groups who either lease the land and pay for its usage for a farming season or share the yields on a proportion of 1 part of the harvest to the land owner to 2 parts to the farmer himself. A middle-aged smallholder maize farmer who is also an *Ewe*, a settler ethnic group, clarifies that the decision as to how he acquires a particular plot of land for maize cultivation for a particular season depends, entirely, on the land owner and their economic situation. Those who prefer outright lease for one year are usually in need of urgent money for some other purposes, in which case, the price is negotiated and paid for, upfront, before the actual cultivation starts. This way, they do not bear any risks in terms of whether the maize will do well or not. However, the second option of sharing the maize output is more common in the area since most farmers cannot afford huge amounts to pay for land for farming. This is also the preferred option for female landowners as well as the relatively well-off in the society who cannot do the actual maize cultivation or prefer to invest their time and resources in other income-generating activities other than maize farming respectively. They prefer this way of participating in the maize chain because the only time they have to go to the maize farm is the day of harvest when they go and collect a third of the output.

The general consensus among the smallholders interviewed for the study was that maize farm sizes were shrinking in size and other crops rice and cassava are gaining from this shrink in maize

farm size. The smallholders were asked about the size of the maize farms and whether it has been increasing, decreasing or remained fairly the same size over the last 5 years. A smallholder in his early 50s responded that: *“This year, I did just 2 hectares (with a hint of disappointment in his tone) but a few years back, the minimum for me was 6 hectares but now I spend more time in my shop (pointing to his carpentry shop)”*. He further explains that no matter what happens, he will continue to cultivate maize and that it has become something of a tradition passed down through successive generations in his family. While uncertainty surrounds prices, most of the smallholders do not envisage leaving the land altogether though most have increased their multi-activity.

5.2 Trends of Maize Producer Prices

While price trends are, usually, likely to follow a given trajectory unless and until, a factor or factors out of the ordinary, nudges them in a different direction, agricultural commodity prices are well-noted for price fluctuations and data from the fieldwork reinforces this position as maize prices at Worawora show wild variations over the past 5 years. At the smallholder farmer level, maize grains are bought in relatively small quantities and so the unit of measurement and sale is a bowl, locally called *Mudu* or *Olonka* (Figure 3). This is unlike other agricultural produce such as rice which is sold, even at the smallholder farmer level, in weights in kilogrammes. While the particular one shown in the figure below is the one generally used, there are occasions when maize buyers demand from individual farmers that they be allowed to use another one which is slightly bigger than the usual one if they, the farmers wanted the prevailing prices to apply, otherwise the prices would have to be reduced. As one old smallholder farmer narrated: *“the buyer said that the prices at the markets where they sell the grains had gone down and so she would buy at the previous rate only if I allowed her to use a slightly bigger Olonka, otherwise, she would buy it at a reduced prize. In the end, I had to allow her since I needed the money”*. Maize grain prices generally show significant variations within seasons as well as between seasons. This is symptomatic of this level of the maize value chain as it is for agricultural commodities in general. According to a middle-aged smallholder maize farmer:

“This year, maize farms have done very well and so prices have not changed that much, it has been the same 2 GHC for a couple of months there are rumours of prices reducing to 1.50 GHC. This is totally different from last year when prices rose to as

high as 4.50 GHC per an Olonka. Some farmers even sold their grains for 5.00 GHC. For the past couple of seasons, maize prices have swung from very high prices one year to very low the following year. The fact that last year was the best and this year has been the worst in the last couple of years makes it even harder”.

Not only does the above view show the link between yield productivity and price trends, but it also the price variability characteristic of smallholder maize markets at the local level.



Figure 3: Measuring bowl (Olonka or Mudu) for maize at Worawora, 2013.

Source: Fieldwork July 2013.

The table 1 below shows the producer price history of maize grains at Worawora in GHC per an *Olonka* between 2008 and 2013. The price variation that has become characteristic of international grain markets in the last couple of years is accentuated at the local level where farmers participate in the maize value chain.

Table 1: Producer price of maize at Worawora between 2008 and 2013 (Worawora Series).

	2008	2009	2010	2011	2012	2013
January	3.00	2.50	2.50	3.00	2.50	3.50
February	3.50	2.50	3.00	2.50	3.00	3.50
March	4.00	3.00	3.50	2.50	3.00	3.00
April	4.00	3.50	3.50	3.00	4.00	2.50
May	3.50	3.00	3.00	3.00	4.50	2.50
June	3.00	3.00	2.50	3.00	4.50	2.00
July	3.00	2.50	2.50	3.50	4.00	2.00
August	3.50	2.50	2.00	3.00	4.00	2.00
September	3.00	3.00	3.00	2.50	4.00	
October	3.00	3.50	3.00	2.50	4.50	
November	2.50	2.50	2.50	2.50	4.00	
December	3.00	2.50	2.50	2.00	4.00	

Source: Fieldwork, July 2013.

NB: Exchange rate of 1 Dollar being equivalent to 2.10 GHC as at August 2013.

As the producer price history of maize at Worawora shows in Table 1 above, the price of an *Olonka* of dried maize has fluctuated between 2 GHC and 4.50 GHC between 2008 and 2013. The more fascinating aspect about this price changes, however, is the variations between months within the same year. It is entirely possible to have the price vacillate between the two extremes in any given year. For instance, the price dropped from 3.50 GHC per an *Olonka* in January 2013 to 2 GHC per an *Olonka* by August 2013. Though the mainstream view is that prices tend to be highest at the peak of the hunger season when new crops are just about maturing, the data from the field as depicted in the table 1 above points out that these price changes do not follow any regular patterns. Most of the smallholder maize farmer-informants, however, seem to agree that March and April for the minor season, and October and November for the major season, usually record the highest prices. This is

clearly shown in Figure 4 below, though there is an exception when July recorded the highest price in 2011. Furthermore, for the five-year period which the data covers, 2011 recorded the lowest average price of an Olonka of maize of 2.58 GHC.

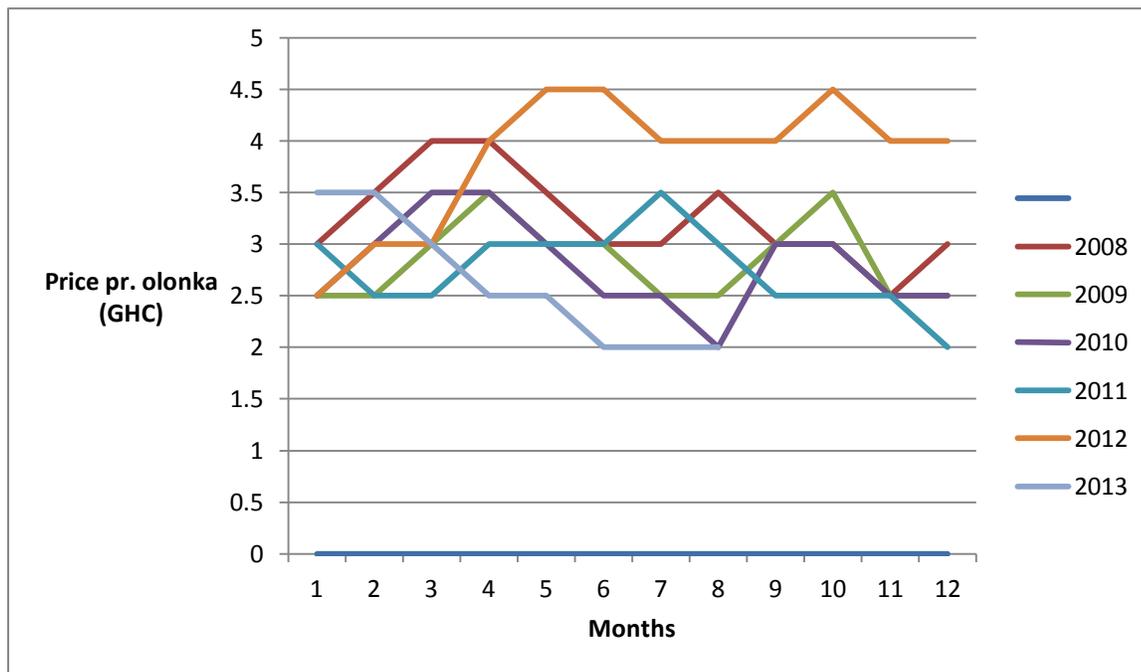


Figure 4: Price trends of maize at Worawora between 2008 and 2013

Source: Data from fieldwork.

It is important to note also that 2012 recorded the highest monthly average of maize of as much as 4.50 GHC though some farmers even claim that some buyers purchased some maize grains for 5 GHC for a few weeks in May and November 2012 at Worawora. Coincidentally, my fieldwork period of June to August 2013 also recorded some of the lowest prices in recent history, recording as much as 50% reduction price from over 4 GHC per an Olonka in 2012 for the same period to 2 GHC for 2013.

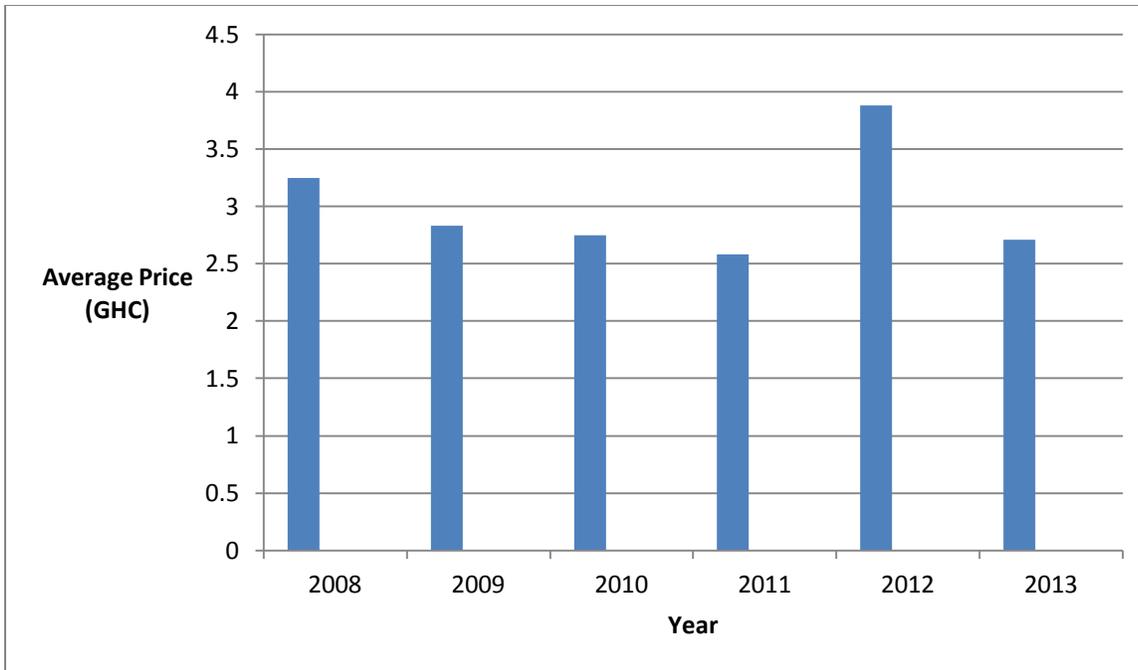


Figure 5: Yearly average of the price of an Olonka at Worawora between 2008 and 2013

Source: Based on data from my fieldwork.

5.2.1 Comparison to Maize Price Trends on the International Markets

It is interesting to compare these price trends at the local level, where smallholder maize farmers from the study area participate in the maize value chain, to those at the international market level to verify the degree to which prices are transmitted to the former. This can have important implications for smallholders' motivation and willingness to intensify production through capital investments and/or through extensification of cultivation in the face of escalating prices on the international markets.

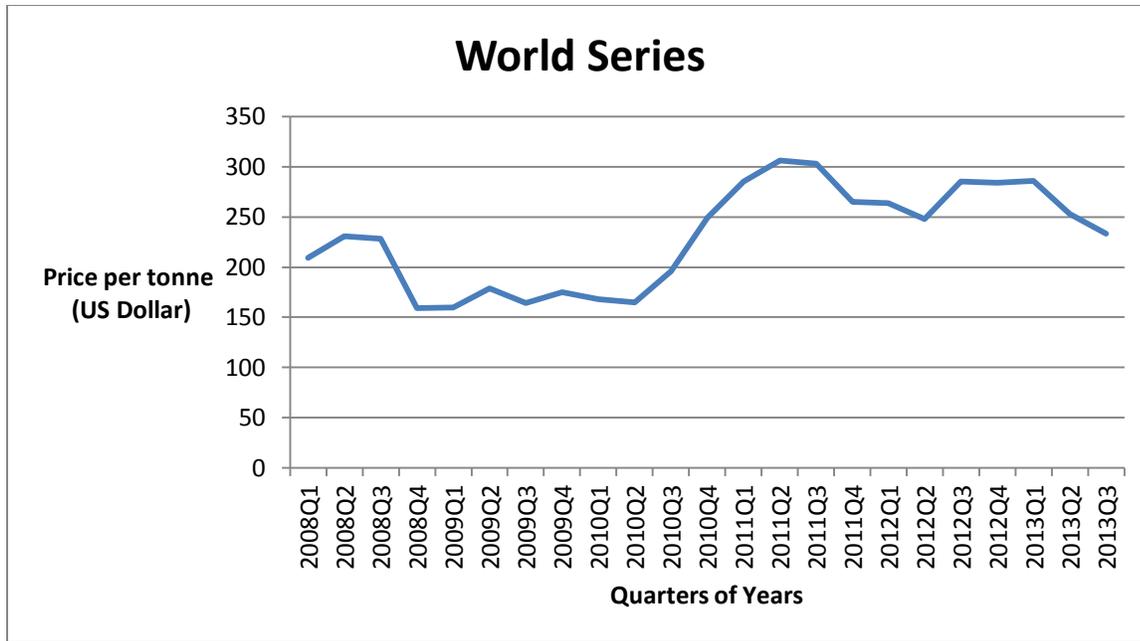


Figure 6: Quarterly averages of maize prices on the global market between 2008 and 2013
 Source: FAO 2013, based on data from the International Grains Council.

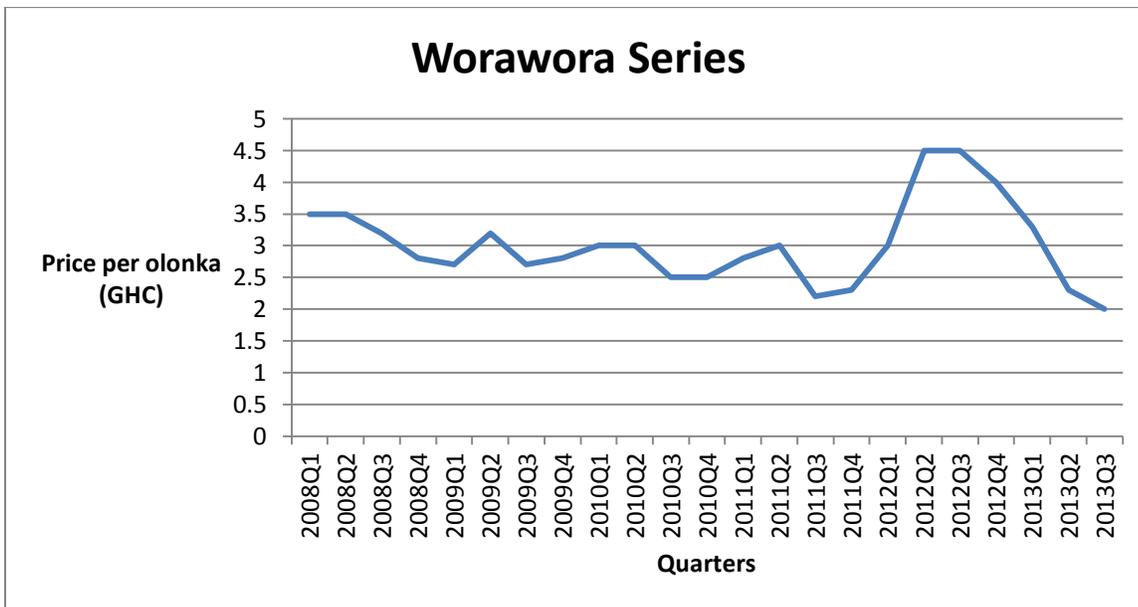


Figure 7: Quarterly averages of maize prices at Worawora between 2008 and 2013
 Source: Fieldwork, 2013.

An analytical comparison between Figures 6 and 7 depicting the trends of maize prices by quarters on the international market and the local level at Worawora, respectively, brings into sharp focus a point of divergence between the two markets. While maize prices have been shown to have increased significantly on the international market and have relatively stabilized at a high equilibrium, those at the local level continue to show high variability from extreme highs to extreme lows. As Figure 6 above shows, the price per a tonne of maize on the international market has rarely gone below 250 US Dollars since the third quarter of 2010 while Figure 7 shows that the third quarter of 2011 and 2013 recorded the lowest in the last 5 years which the study covers. This implies that, notwithstanding the price volatility that the international agricultural market have been touted and known for, local markets experience far greater price instabilities.

More importantly, in an increasingly globalized world economy in which national economies are largely liberalized based on the Bretton Woods Institutions' model, the tacit expectation is that increasing prices of agricultural commodities on the international market will, to a large extent, transmit to local markets. This is the expected to spur agricultural growth and improvement in incomes for farmers as higher prices will encourage farmers to invest in their farms. However, the trajectory of the price trends as shown in Figures 6 and 7 suggest a negligible level of price transmission from the international market to the local market and where price transmission exists, the time lag is long – too long to have any important and timeous implications in terms of motivating smallholders to increase production in order to take advantage of increasing maize prices on the international market. For instance, while prices reached their zenith in the second quarter of 2011 on the international market, it took more than a year for prices to reach similar levels in the third quarter of 2012. More to the point, while prices have maintained a high equilibrium on the international market after peaking in the second quarter of 2011, those at the local level, as shown by Figure 7, continue to show a downward trend, so much so, that the second and third quarters of 2013 experienced some of the lowest prices at the local level in the 5-year period.

It is pertinent to note, however, that this negligible price transmission between international markets on the one hand and local markets on the other hand, is not necessarily undesirable or even accidental. Deliberate government policies can be put in place to insulate local agricultural commodity prices from volatilities on the international market. Such a policy will necessarily attempt to minimize the degree of price transmission to the barest minimum so that local consumers

are protected from increasing prices on the global markets. While such policy instruments may be useful in protecting the urban poor in developing countries like Ghana, it can have both dramatic and subtle effects on smallholder farmers in rural areas.

The position of smallholder maize farmers at the lowest levels of the maize Value Chain makes them susceptible to these price disadvantages and they appear, largely powerless to do anything about it. Though price trends at the international level points to a possibility, and even probability, of improvements in their wellbeing, in reality, their incomes are not seeing any growth. They are powerless in a buyer-driven Value Chain where the buyers of their maize grains control and determine the terms of trade between the various actors (Kaplinsky and Morris 2011). As an older smallholder maize farmer aptly puts it: *“When you see prices go up in Accra, you would think most of it go into farmers’ pockets and that our incomes are rising but that is not the case. Most of the difference goes to the middlemen”*.

5.2.2 Smallholder Maize Farmers as Price Takers

When the smallholder maize farmers at Worawora were asked what they thought accounted for the strong variations in prices on yearly basis, most of them were convinced the wild prices changes is mainly dependent on how yields do in a particular cropping season which, in turn, is largely determined by the amount and distribution of rainfall for that farming season. In the view of an older smallholder maize farmer in his early 50s:

“The main factor is how well maize yields do for a particular farming season which determines the availability of maize grains relative to demand. Most farmers get discouraged when prices for a particular season fall so that they do not cultivate as much the following season. When this happens, then obviously there will be less maize available relative to demand and this pushes price to increase. However, whenever prices increase like that, then more hectares are cultivated the following season leading to prices falling again”.

What the above epitomizes is the price volatility characteristic of maize grains at Worawora and more importantly, the cycle of boom and bust which connive to ensure that smallholder maize farmers lose out in terms of incomes whether they increase production levels or maintain them. On the one hand, they, logically, hope for good rains which are well-distributed in the course of the

farming season to maximize yields, this inexorably leads to dampening of maize prices. On the other hand, in seasons when yields are low and prices consequently increase significantly, most of them are not able to take advantage of the higher prices because they do not have enough grains due to bad harvest, with the exception of a few fortunate ones who had planted their maize crops at the most appropriate time.

It is important to note, however, that not all the smallholder maize farmer informants are of the view that the main determining factor of maize grain prices in the area is yield productivity. A middle-aged smallholder farmer believes that government policy, particularly on the importation and exportation of maize between Ghana and neighbouring countries of Togo, Benin, Burkina Faso and Cote d'Ivoire is the main determinant of prices. According to him, local maize prices would be much more stable if importation of maize grains from these other countries were halted or at the very least controlled. Though in theory, only the Yellow maize variety is supposed to be imported, chiefly for the production of animal feed, the porous and largely unregulated border situation, coupled with the entrepreneur's natural inclination to seek profit maximisation implies that there cannot be a strict ban on importation and exportation of the White variety of maize, especially in today's globalized and liberalized free market economy.

Ideally, the price of an *Olonka* of maize is determined at the commencement of the harvest season by a farmers' committee led by the Chief Farmer of Worawora and then the rate is publicly announced at a large gathering such as a funeral ceremony where majority of the adult population of the town is expected to be present. The announced price is supposed to hold throughout the season. In practice, however, the announced price rarely holds even for a couple of months. Though there are some local maize buyers who purchase the maize for their domestic consumption or for the preparation of Kenkey, Akple, and Koko for sale on commercial basis, the main buyers of maize grains are non-residents of Worawora. Though the former group of buyers generally buys at the pre-announced rates, they do not need larger quantities. The latter group of buyers who have the wherewithal and the need for larger quantities generally do not follow the preset prices. Interestingly, this group usually gets locals to serve as their proxies so that the locals purchase the grains on their behalf on commission basis and when stocks are piled enough, they are taken across the border and sold at relatively better prices.

It is also interesting that buyers can, on individual basis, decide to go against the announced price for the Olonka of maize without any consequences and the smallholder maize farmers generally seem powerless. This is not however strange because the maize purchases are done at individual smallholder farmers' homes and as such they tend to be agreeable to terms that even they believe is unfair and unfavourable. A middle-aged smallholder maize farmer explains: *"Though we all know the announced price, if I needed cash urgently for my son's school fees for example, and a buyer is offering to purchase at slightly less price, I have no option but to sell to the buyer"*. This shows that while the smallholders would want to sell according to set prices, if buyers do not cooperate to buy accordingly, the latter become powerless. It also shows that one of the main reasons for this vulnerability is their poverty and limited income sources. Asked if they engaged in any form of price negotiation before they sell their grains, an old smallholder in his early 60s explains that:

"Sometimes, I try to negotiate to increase the price but mostly the buyers come with pre-determined prices which are usually below the announced one. What is worse is that some of them would come with two different sizes of Olonka and then tell me that if I agreed that they use the slightly bigger Olonka then they would be willing to buy at the announced prices but if I insist on the medium sized Olonka which is the appropriate one then they would pay a lower price. Since I might be in need of cash for, say, fish or meat for the household, I have no other option than to sell at the price they offer. If I refused to sell, my wife and children may go to bed unfed".

This sense of powerlessness is not only felt by the poorest in the society but even those who might be seen as doing relatively fine financially. A young smallholder, in a conspiratorial demeanour intimated that even the Queen Mother of the town sold her share of maize from her land to an out-of-town buyer who was using a slightly larger Olonka to measure her maize just because she needed the cash at the time. Part of the of their conundrum lies in the unpredictability of maize prices. This is largely because prices are not guaranteed to rise or fall at certain times of the year.

Their lack of any bargaining power to effect any changes in prices to bring about improvements in their living conditions is palpable. The best most of them are able to do is to merely hope for good prices at the time of sales of their maize grains. Asked whether they sell their grains immediately after harvest or they are able to wait until prices change in their favour, it became clear that most of them prefer to sell off their grains. A middle-aged smallholder maize farmer-informant explains his decision to sell as soon as possible: *"Usually I would bag it and wait for prices to improve around April or November but sometimes, prices go down instead of up so generally I am*

forced to sell at prevailing prices because if I waited and then later I needed cash for an urgent matter such as payment of school fees for my son at which time prices may not have increased but rather decreased, then I would lose out". An older smallholder farmer also explains that in addition to unreliability of future prices, he does not store his maize grains because doing so would involve the utilisation of chemicals which comes with additional financial burden and might not be healthy for human consumption. This view is significant in the sense that, not only do smallholders not favour modern methods of grain storage and preservation due to the extra financial cost but also because they view the consumption of maize stored with preservatives as harmful to human health.

Judging from the above, it is not too surprising that the commonest storage option is what they describe as the natural method whereby the maize is kept on the husk after harvest and then stored in a dry place such as on top of the kitchen where the smoke from cooking constantly keeps the maize bushels dry. Alternatively, they would de-husk the maize and then store the grains in a bag so that, at least twice a week, the farmer spreads the grains on a cemented floor in the sunshine for a couple of hours a day. This method is mainly aimed at reducing the moisture content of the grains as the higher the moisture content of stored grains, the greater the possibility of contamination. This storage practice is, however, labour-intensive. It requires close watch to drive away domestic animals such as fowls, goats and sheep as well as the farmer's ability to gather and bag all of the maize grains within a few minutes in the event of a rain shower. Hence, additional time which could have been used more for more productive ventures is superfluously expended on already harvested grains to keep them from contamination. This is, perhaps, one of the main reasons why most of the smallholder farmers preferred to sell of their grains immediately after harvest to avoid the additional hassle, despite the possibility of getting higher prices later in the season.

5.3 Trends of Consumer Goods Prices

It is important to note that, while income from maize grains sales is usually not the sole source of income for most of the smallholder maize farmer-informants, it constitutes their main sources of income and by extension, livelihood. Furthermore, the kind of maize value chain that they are engaged in, which is largely buyer-controlled, effectively renders the smallholders powerless to effect any price or policy changes that can, in a meaningful way, improve their incomes. These buyer-driven chains ensure that the maize buyers effectively dictate prices, medium of measurement

and the general terms of the sales and marketing of maize grains so that the smallholders are reduced to mere price-takers. This has also led to the situation where local producer price that smallholders receive for their maize grains does not move in tandem with prices on the international market. However, the divergence of price trends between local and international markets only occurs on the income side as, in terms of expenditures that these smallholders are faced with, the two markets exhibit similar price trends and in some cases, prices at the local level escalate faster than their international counterparts. The next section will deal with the spiraling prices of consumer goods that the smallholders have had to contend with in the face of squeezes on their incomes.

5.3.1 Petroleum Products Price Trends

With the invention of the combustible engine and its widespread use as a means of transportation, crude oil has become an important aspect of the socio-economic and political life of most countries. Contemporary globalisation and geo-political exigencies also means that any developments, no matter how major or otherwise, in any Organisation of the Petroleum Exporting Countries or countries even remotely connected to its member countries has serious repercussions for crude oil prices on the international market. For instance, mention can be made of the 1973, 1979, and the 1990 crude oil crisis as well as the more recent episode which started around 2003 and has not really abated. That latest episode of crude oil crisis has its genesis in the 9/11 attack in New York which apparently culminated in the invasion of Iraq in 2003, though other notable international incidents such as the Libyan Uprising have been known to have exacerbated the already precarious situation so that for the first time in history, crude oil prices reached a crescendo of more than US\$100 per a barrel. The prices reached a peak in 2008 when it reached an all-time high of US\$145 per a barrel.⁹ The pertinent point is that the increasingly interconnected nature of the global economy has led to a situation where petroleum prices have become more volatile than they have ever been.

More to the point, petroleum prices have become an important input to the prices of goods and services. While petroleum products prices and that of general goods and services have been intricately intertwined in Ghana for a long time, the former's real effects on the final consumer has,

⁹ <http://www.infomine.com/investment/metal-prices/crude-oil/all/>

for a long time, been distorted by deliberate government policy to subsidize petroleum price increases. This was the case until the implementation of the deregulation policy in the energy sector of Ghana. With the implementation of the deregulation policy, not only is the whole price shifted to the final consumer, but taxes and margins are also included in the ex-pump prices of these petroleum products. Between 2005 when the policy was introduced and 2008, petroleum products prices increased by some 150% from 44 Pesewas per litre in 2005 to 110 Pesewas per litre.¹⁰ In addition to price volatility of crude oil prices on the international markets, the local currency's instability against the major trading currencies continues to worsen the already dicey price environment. The above factors as well as others have contributed in no small way to burgeoning petroleum products prices in Ghana since the implementation of the deregulation policy which, for all intents and purposes, is the kind of liberal policies usually championed by the Bretton Woods Institutions (BWIs).

As the Figure 8 below shows, the price of Premium petrol, which is the main form of fuel for most road transport users in Ghana, increased from 110 Pesewas¹¹ per a litre at the beginning of 2008 to 255 Pesewas per a litre by the beginning of 2014, representing over 130% increment within 5 years. All the main petroleum products prices follow similar trends in the last half decade as shown in the Figure 8 below. Kerosene, for instance, which is a major source of energy for most rural dwellers such as those at Worawora, has seen a price increase of about

¹⁰ http://www.npa.gov.gh/npa_new/Downloads.php

¹¹ The Pesewa is the smallest denomination of the Ghanaian currency, the Cedi; 100 Pesewas is equivalent to 1 Ghana Cedi.

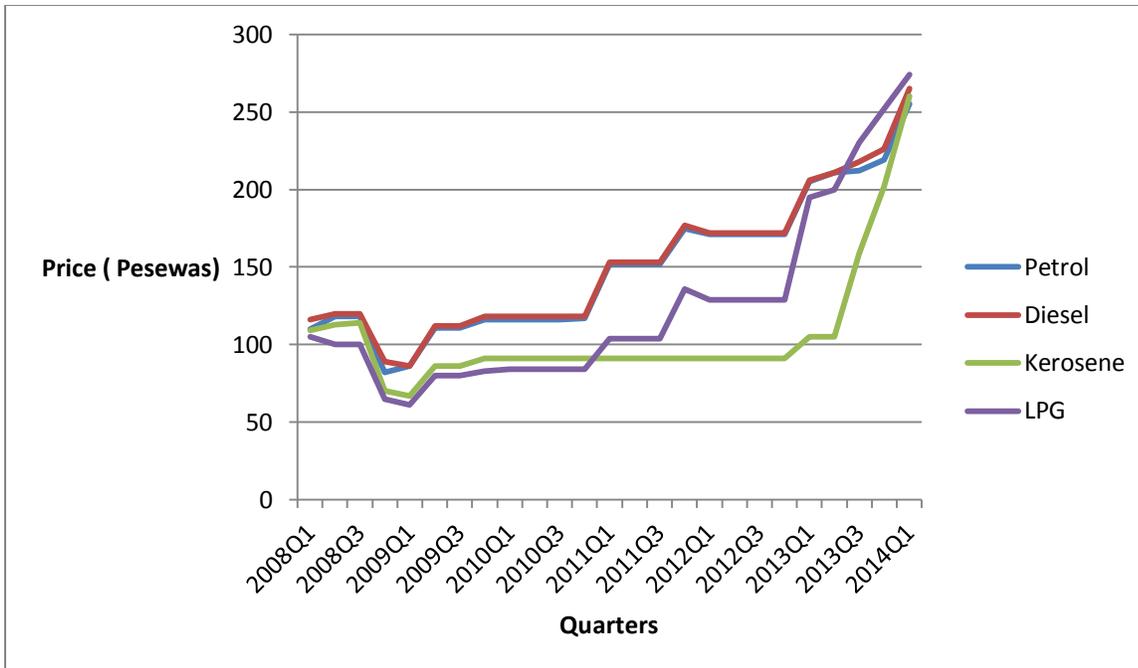


Figure 8: Trends of prices of petroleum products in Ghana between 2008 and 2013

Source: Based on data from the National Petroleum Authority (NPA), 2014.

All prices in Ghana Pesewas are per a litre with the exception of Liquefied Petroleum Gas (LPG) which is per kilogramme.

140% in the same time span of 5 years while its price increase from 105 Pesewas per a litre in the first quarter of 2013 to 274 Pesewas per litre within a year, an increment of as much as 150% does not portend well. This, as well as LPGs price increase of more than 160% from 105 Pesewas per kilogramme to 274 Pesewas per kilogramme within the last 5 years has serious implications for environmental campaigns that seek to encourage people, especially in the rural areas, to move away from their over-reliance on wood to LPG for their energy needs. This can have dire consequences for deforestation and lose of vegetation in these hitherto, forested rural areas as there is a good chance of a growing demand for charcoal in the face of growing LPG prices. What is even more worrying is that, the growing instability of the local currency implies that even when crude oil prices stabilize on the international market as it has done in last 2 years when the prices have stabilized between US\$110 and US\$130 per barrel, the ex-pump price continues to increase on the local market as the Cedi continues to lose value relative to the Dollar and the other major trading currencies.

It is interesting to note the general dip in prices on the local market for petroleum products across the board is contrary to what happened on the international market at the same time as shown by Figure 8 above. This was the consequence of a deliberate government policy to absorb price increases and rather reduce prices since in the December 2008 National Elections, one of the key issues was the burgeoning cost of living which was impoverishing most people. It may be argued that this was a tacit admission on the part of the then government of the stifling socio-economic effects that these price increases were having on the livelihood of people, especially, the most vulnerable in society. It is, however, interesting that within a couple of months after the elections, the prices resumed their usual trend of continuous increase.

A smallholder maize farmer, who is about 60 years old, explains the inextricable linkage between petroleum prices on the local market and the cost of general goods and services: *“The price of everything changes as soon as fuel prices increase. Formerly, fuel prices did not change as regularly but these days, it changes almost every other week and whenever I go to the shop to buy anything I find out the price has been increased compared to the previous week and when you complain the shop owner would ask you if you were not aware that petrol prices have increased? This is a serious problem for us here”*.

Consistent and persistent price increases are a huge difficulty for most of the smallholder maize farmers I interviewed. This has resulted in a situation where they spend continuously larger proportion of their incomes on such goods and services. Not only has energy costs burgeoned courtesy of petroleum products’ price increases, but the corollary of transportation costs have also increased. A middle-aged smallholder maize farmer who also owns a provisions shop explains the effect of higher transport costs on her shop:

“With maize grains, sellers cannot on their own increase prices (simply) because petroleum prices have gone up but commercial transport owners are able to increase their fares, sometimes much more than the proportion of increase on fuel even if their association instructs them to do otherwise. Because I need to go to Accra once or twice a month to restock my shop, I usually take the opportunity to take along my maize grains to sell in the city which gives me better prices. Transport fares continuously increase, even with the Metro Mass¹², prices increase on every trip so

¹² The state-run Metro Mass Transport Buses have started plying long distance routes and their fares are known to be much cheaper than privately-run commercial vehicles plying same routes.

then I have to revise the prices in my shop otherwise I would not be able to purchase the same quantities of provisions for my shop and in no time I would have to close the shop down”.

The farmer above is able to engage with the maize value chain at a higher level than she would normally do and consequently reports higher incomes from selling her grains in markets of the city of Accra rather than selling at Worawora. More of this analysis on the level of smallholder maize farmers in the maize value chain in later sections. Transport owners sometimes increase transport fares in excess of current fuel price increases in anticipation of future fuel price increases and passengers such as the smallholder above bear the brunt.

5.3.2 Expenditure on Food Items

It is important to note that most of the smallholder maize farmers spend a large proportion of the incomes, whatever the sources may be, on food items. This is regardless of the fact that they are, primarily, farmers and their business is food cultivation. Even though maize farming is the main form of agriculture and covers the largest proportion of the cultivated area, it is normal for such smallholder maize farmers to cultivate a little bit of most other crops so that they would not have to spend on food items that they could have cultivated on their own. It's therefore not uncommon to find maize farmers cultivating such crops as cassava, yams, cocoyam, plantains and groundnuts as well. The above notwithstanding, the smallholder maize still ends up doing important purchases before meals reach the household's dining table. A middle-aged farmer explains that he still has to buy some food items such as tomatoes, onions, rice and ginger in order to prepare meals. While some of these food items cannot be cultivated in the area for climatic reasons, farmers cannot be expected to cultivate everything the soil and climate allows.

When they were asked to mention some of the essential consumer goods that they usually spend most of their incomes on, the list was virtually endless but the standout items were soap, both for washing clothes and bathing, cooking oil, clothes, rice¹³ as well as farm implements and fertilizers for a few of the farmers. With regards to food items, most of the smallholder maize farmers seem to agree that *enam*, a generic term used to describe most protein sources such as meat,

¹³ Especially the imported variety, they have acquired the taste for imported perfumed rice so that even though there is a rice mill in the town which produces rice which sells at about half the price of imported brands, people are usually willing to pay the extra for the imported rice.

fish, and crabs of all types and forms, is the main driver of their high expenditure on food. Apart from meat and fish, onions, tinned tomatoes as well as fresh tomatoes contribute significantly to their food expenditures. While other items such as sugar, salt, and bread have seen significant price increases, their relative importance in the expenditure of most of the smallholder farmers' household makes them less significant component of their budget.

Fish and meat are an important part of diets as they supply much needed protein and should not be forgone in an ideal world due to their nutritional value. However, the continuous increase in the prices is making them luxuries that smallholder maize farmers sometimes feel they cannot afford. A young maize farmer explains that more than half of his daily expenditure on food goes into the purchase of fish and/or meat and believes that the dwindling stocks in the Volta Lake is pushing prices up, so much so, that they are forced to rely on cold stores which stock imported chicken, beef, and fish. The prices of these are, however, intricately linked with fuel prices, transport costs and taxes. Even fish catch from the Volta Lake has seen price increases in tandem with fuel price increases as the fishing boats also run on pre-mix fuel which has also seen significant price increases.

Apart from enam, most of the smallholder maize farmers also reported spending significant expenditure on tomatoes, both the fresh ones and the tinned tomatoes. While there is no standard scale for measuring fresh tomatoes to compare prices, most of them seem to agree that fresh tomatoes have become more expensive compared to two years ago. It is noteworthy that though some parts of the country are climatically conducive for tomato cultivation, most of the fresh tomatoes consumed in Ghana are imported from Burkina Faso. A middle-aged smallholder maize farmer explains that: *“A little over a year ago, I could use just 50 Pesewas worth of fresh tomatoes to prepare two or three meals but these days, when I buy even 1 Cedi worth, I will be fortunate to get just four pieces of tomatoes and even then, they are likely to be stale from sunlight or almost rotten”*. The high price of fresh tomatoes, coupled with the fact that sometimes, they are not really fresh, has caused many consumers to shift to tinned tomatoes as, at least, for the latter, they are assured of the content of what they are paying for.

While tinned tomatoes are gaining popularity among smallholder maize farmers, it is not without its own price concerns since the raw material is still tomatoes. The 400g, for instance, has seen more than a 120% price hike in the last two years from about 1.20 GHC in 2011 to 2.60 GHC

by the end of 2013. What is fascinating is that they seem to have developed the taste and preference for the tinned tomato which is factory-canned, so much so, that even when the fresh tomatoes are available and at similar or even lower price levels, they still prefer the tinned tomato to the fresh ones and most of them choose to combine them in the preparation of their meals.

Another factory-manufactured consumer food items that most of the smallholder maize farmers reported spending significantly on is cooking oil. A middle-aged maize farmer explains that the price of a 2.5 litre bottle of a Frytol Cooking Oil has more than doubled from 11 GHC to 24 GHC within the last 2 years. Most of them seem to agree that they have tried to use alternatives such as the locally-produced palm oil but that has also become expensive and besides, there are certain dishes for which substituting vegetable cooking oils with locally-produced palm oil just does not apply. They are, therefore, left with no choice than to buy these vegetable cooking oils at prevailing prices.

One other key cost component of the expenditure of most of the smallholder maize farmers is soap and detergents for bathing and washing clothes. The most popular for bathing are Geisha and Sunlight soaps, while the Omo detergent and the Key Soap are both used mainly for washing clothes. The prices of all these consumer goods have, unsurprisingly, experienced steep increases in the last couple of years, according to the best recollections of most of the farmers. A bar of the Key Soap which cost 1.80 GHC at the beginning of 2012 was selling for 4 GHC by the end of 2013, seeing a price increase of more than 120% in less than 2 years. In the same vein, a cake of Sunlight Toilet Soap which was selling for 70 Pesewas at the beginning of 2012 cost 1.60 GHC by the end of 2013, also showing more than 130% price increase within 2 years. The price of the Omo Detergent for washing clothes and Geisha Toilet Soap both follow similar price trends. Not only are the prices increasing, but they are increasing at a rate that the incomes of smallholders does not seem able to sustain.

5.3.3 Expenditure on Farming Implements

Admittedly, the expenditure on farming implements is relatively less important compared to the other consumer goods discussed above. This notwithstanding, farm implements such as fertilizers, cutlasses and hoes, spraying machines and weedicides have important ramifications for maize farm

productivity, and by extension, farm incomes and so their cost trends needed to be considered. Most of the smallholder maize farmers reported using little to no fertilizers on their maize farms, largely because they believed they are getting the maximum yield possible from their lands because the lands are naturally fertile. When I asked a middle-aged smallholder maize farmer if he applies fertilizer to his maize farm to improve yields, he explained that he does not think the problem for them is soil fertility because he, together with his senior brother, inherited large tracts of land from his father and due to the vastness of the land, they are able to practice shifting cultivation and so they are able to allow the plots to lie fallow for some period to regain soil fertility. He also points out that application of fertilizer is just an additional cost which they could do without. This view seemed to be shared by most of the smallholder maize farmers who see fertilizer usage as a luxury that they could not afford and is largely, superfluous, particularly for the Akans, who usually have access to several hectares of land and can therefore practice shifting cultivation. However, the few who felt the need to apply fertilizers to improve their yields per hectare were deterred from doing so by the cost involved.

A middle-aged smallholder maize farmer who used to cultivate about 2 hectares per farming season explains his predicament when he decided to increase his acreage for the current season:

“Last season when the price per an Olonka went as high as 4.50 GHC, I vowed to make more money this current season so this year I cultivated 6 hectares but I had to invest some money since I could not do everything by myself. Each hectare costs 55 GHC just for the clearing and another 35 GHC for planting. I usually do the farm maintenance myself but due to the larger size this season, I had to resort to the spraying machine. I also opted for the spraying to kill the weeds on my maize farm because I was told the chemical contained ammonia¹⁴. The chemical alone cost 10 GHC per can and I used 2 cans per a hectare. I also hired farm hands to help in the harvesting and a vehicle to transport the maize to the house. After all these additional cost, I ended up having to sell my maize grains at half the price of last season”.

Speaking with this farmer, it became quite obvious that he had regretted his decision to invest additional financial resources into his maize farm, particularly costs pertaining to fertilizer and initial clearing of plots. This is evident in his assertion that on hindsight, perhaps he should not have increased the farm size to that level and that the only upside was that he was able to reduce his costs

¹⁴ Referring to ammonium nitrate which is one of the commonest form of fertilizer.

by also spraying other people's farms on the days when he rented the spraying machine to earn some bonus income.

It is also interesting to note that, farmers who cultivate some other cash crops such as mangoes, cocoa, pineapples, and oranges generally use, relatively more fertilizers and weedicides compared to maize farmers as the latter group of farmers see expenditure on such as unnecessary additional cost to avoid. This implies that cost is a major deciding factor in smallholder maize farmers' decisions as to whether or not to use fertilizers and insecticides on their farms. It also follows that a situation where prices of fertilizers are increasing at astronomical rates would not augur well for its usage to improve maize farm productivity. Since one of the central tenets of the PRSPs and SAPs championed by the BWIs was the scaling back of the state's role in the marketing of fertilizers and weedicides leading to the removal of subsidies on their prices. An upshot of this is the increased participation of the private sector, whose main priority is profit maximisation, to occupy the spaces left by the scaling back of the state. The consequence is that cost increases on these products are wholly transmitted to the final consumer, in this case, the smallholder maize farmers. This is in sync with the view of Alston et al. (2009) that higher inputs prices contribute significantly to a general slowdown in agricultural productivity. There are, however, exceptions for cash crops such as cocoa where the state still sees the need to sponsor random and isolated programmes to supply inputs such as fertilizers and weedicides or provides substantial discounts for their acquisition for this specific cash crop farmers. It is therefore not surprising that cash crop farmers generally use more fertilizers compared to food crop farmers such as smallholder maize farmers.

5.3.4 Expenditure on Education and Health

As far as expenditure of smallholder maize farmers is concerned, education and health are two of the major ones. Affordability and universality are two basic principles that have always been central to education and health as enshrined in the Directive Principle of State Policy. Prior to the implementation of the SAPs, education was virtually free of charge from the basic to the tertiary levels. Even when the implementation of the conditionalities attached to the SAPs led to full cost recovery at the tertiary level, and fee paying, albeit partially, at the primary and secondary levels, the Free Compulsory Universal Basic Education (FCUBE) was incorporated into the 1992 Republican

Constitution to ensure that, at the barest minimum, education remained affordable and universal at the basic level.

The above notwithstanding, most of the smallholder maize farmers were of the view that education was still a major outlet of expenditure, even at the basic level. Though school fees, per say, are not supposed to be charged at this level, there are a number of dues and levies which ensure that parents whose wards are students at this level spend substantial amounts of money in addition to costs on text and exercise books. Though the government has implemented such laudable policies as the School Feeding Programme and the Capitation Grant, smallholder maize farmers still complain of substantial bills they have to pay for their children at this level of education. A middle-aged smallholder maize farmer explains that: *“I have 3 children with 2 of them in the primary school and though the government says it has taken care of the school fees and that we do not have to pay for our children to go school, education even in this part of the country is not completely free of charge as the school authorities find ways to take money from us under various guises and we have no choice but to pay since withdrawing my children from school is not something I would want to do”*.

Another middle-aged smallholder maize farmer, who has 3 of his children in their teen ages, laments that the above situation where parents are charged unapproved fees by school authorities is even worse at the Junior and Senior High School levels. At this level, it is not uncommon to find teachers, who teach these students during normal school hours, also organize extra-classes after normal school hours and charge between 50 Pesewas and 1 Cedi per each session. Though such extra-classes are supposed to be optional, in reality, parents are forced to pay for such classes since the parents believe the teachers deliberately perform at optimal levels in these sessions rather than the normal school hours and that class tests and exams are usually based on these extra-classes.

Another complaint which seemed ubiquitous among smallholder maize farmers who have children of school going age was charges of dues on such miscellaneous items as furniture dues, Parent-Teacher Association dues, and development levy. Though it does not constitute good enough grounds, school authorities tend to charge such auxiliary fees to supplement their traditional sources of income as government subventions for running schools such as feeding fees for boarding schools are known to delay virtually every year. Besides, though most schools have general libraries which are supposed to stock most of the required textbooks, smallholder maize farmer-parents are also

saddled with expenses on books, both textbooks and exercise books. All these contribute in no small way to increasing the costs that smallholders have to pay for their children in the area of education.

Smallholder maize farmers who are fortunate to have their children progress to the tertiary level are burdened with even higher costs. This is largely because, while there is deliberate government policy to make education progressively free or, at the very least, less expensive at the primary and secondary school levels, the opposite holds true at the tertiary level. The policy of Full Cost Recovery operating at the tertiary level implies that Academic Facility User Fees and residential facility fees on university campuses have more than tripled in the couple of years. A smallholder maize farmer in his early 50s who has a son in the country's premier university, the University of Ghana, explains the staggering costs that he has incurred as a result of his desire to see to it that his son attained the highest level of education possible:

“My son is at Legon (The University of Ghana) and is currently paying more than 700 GHC every semester for just the school fees. The accommodation charge is around the same amount and if I added costs on feeding and books, then it is a huge expenditure. Obviously, I could not afford it alone so my brother in Accra helps out financially but it is still too expensive. This is very different from when my brother, his uncle, was in the university in the 1980s when it was free of charge and students were fed and accommodated with state money. Now we have to rely on borrowing sometimes but I will not give up”.

Apart from education, expenses on health are another major item of expenditure for most of the smallholder maize farmers. Healthcare costs have always been exorbitant, particularly for more vulnerable groups such as smallholder maize farmers until the implementation of the National Health Insurance Scheme (NHIS). While the scheme is fraught with numerous challenges, it has made healthcare both accessible and affordable to more vulnerable social groups who could not afford the hitherto excessive rates of the Cash and Carry System¹⁵. A middle-aged smallholder maize farmer explains that the NHIS covers most of the common illnesses and there are exemptions for people below the age of 18 and above the age of 70 years though these categories pay 4 GHC as processing fees. The economically-active age group, that is between 19 and 69 years old, pay between 10 GHC and 20 GHC per annum as insurance premiums, depending on their income levels.

¹⁵ The Cash-and-Carry System was the system in operation for healthcare provision in Ghana prior to the implementation of the NHIS whereby, individuals had to pay for the full costs of consultation and other hospital bills including costs of prescribed medicines before they could access treatment in these health facilities.

This smallholder maize farmer believes that, generally healthcare costs have reduced considerably compared to the era of the Cash-and-Carry. To this extent, healthcare costs, mainly as a result of the implementation of the NHIS, are not as exorbitant as they used to be.

Be that as it may, affordability and availability do not necessarily mean improvements in the quality of services delivered. While a free compulsory basic education without commensurate improvement in academic facilities and the number of teachers implies a reduction in the quality of education that is delivered, cheaper healthcare as a result of the NHIS is a necessary but inadequate measure to improve the wellbeing of the people. Some of the smallholder maize farmers, for instance, report of some issues that can potentially affect the quality of healthcare under the NHIS. A middle-aged smallholder maize farmer explains her perception of the NHIS:

“Though it is cheaper to attend hospital with the NHIS card, one does not usually receive the best service and care. For instance, in the hospital in-patients department, there are two queues – one for those of us using the insurance card and the other for cash paying patients. The queue for the former is usually the longer one which means that one could spend the whole day in the hospital. Sometimes too, they prescribe more effective drugs for the cash-paying patients and more common ones such as paracetamol¹⁶ for those of us using the insurance card. Then at the dispensary, an insurance card holder may be told that they do not have the prescribed medicine in stock so he/she should go and buy them from Bless¹⁷ on a cash basis, while cash paying patients are likely to get all their prescribed drugs from the hospital. In all, if one can afford the cost, attending the hospital on a cash basis is the better option.

While the above perception of the NHIS may or may not be the case generally, the fact that such a view is being held by a smallholder maize farmer effectively defeats the purpose for which the scheme was established – to make healthcare affordable and accessible to all. More importantly, this potentially escalates the cost of healthcare in addition to other burgeoning costs that smallholder maize farmers have to contend with.

One important economic indicator of the trends of prices of goods and services is the Consumer Price Index (CPI). It measures the average percentage change in the general price levels

¹⁶ Paracetamol is a common analgesic used for the treatment of minor pains and aches.

¹⁷ The name of a chemical shop.

in the country as experienced by consumers. According to the GSS¹⁸, The average CPI for 2008 of 255 percentage points (2002=100) increased significantly to 399 percentage points for 2012. Even for 2013 when the calculations were re-based to 2012 figures, the CPI increased to over 120 percentage points (2012=100) by the end of 2013. This exemplifies the rate of change of prices of consumer goods in the country as a whole. Segregated data for rural and urban areas were not readily available.

5.4 Price Squeeze from Both Ends?

From the foregoing analysis, I observe that smallholder maize farmers are experiencing price squeeze from both ends. On the one hand, as the analysis in the preceding section shows, producer prices of maize grains, in the type of value chain that the smallholder maize farmers are engaged in and at the level of their participation, fluctuate in an inconsistent manner within as well as between farming seasons. On the other hand, prices of most of the goods and services that these smallholder maize farmers need to lead acceptable socio-economic lives are continuously on the rise and appear not to be moving in the same or similar trajectory as the producer price of maize – their primary source of income. Hesselberg (2013) termed this situation the double squeeze.

The mode and level of participation of the smallholder maize farmers in maize value chains places them at a disadvantage in terms of prices they receive for their grains while that which they pay for consumer goods are almost always on the ascendency. Again, while their participation in the maize value chain is at the lowest rungs in an ascending order, their involvement in the markets for other consumer goods is similarly in the lowest levels but in a descending order. This is by virtue of them being farthest away from the international agricultural commodity markets as well as being the farthest away from the point of production of these consumer goods. FAO (2009) argues that their remoteness from the international markets means that, in spite of the continuous efforts at liberalisation of developing country economies, smallholder farmers are too far-removed from the happenings in these markets so that price hikes on the international agricultural markets do not necessarily automatically transmit to their level in order to translate into increased incomes. This is supported by the analysis of the comparison of the price trends of maize grains between the local and

¹⁸ All data presented here concerning the CPI is sourced from the Ghana Statistical Service at http://www.statsghana.gov.gh/cpi_release.html

the international market in Figures 6 and 7 respectively. While the degree of its contribution is not known for sure, deliberate government policy to insulate local markets from price volatility on the international markets, apparently for food security reasons, is a strong contributory factor to this, largely, poor price transmission between the two markets.

Additionally, markets imperfections, especially characteristic of agricultural markets in developing countries, ensure that the smallholder maize farmer loses out on both counts – when prices of their maize grains increase and when prices go down. Most of the smallholder maize farmers I spoke with were, generally, of the view that, the main determining factor of the price of an Olonka of maize is how well yields do – that the two are inversely related. That is, any season in which maize yields reach optimum levels, prices plummet while prices increase when yields are poor for a particular season. Chang (2009) explains this to be the result of glut in the market as a consequence of the lack of relatively basic facilities such as warehouses, forcing the farmers to sell their grains soon after harvest. The over-supply of grains, relative to demand, leads to maize buyers having the liberty to reduce prices to the barest minimum, to the detriment of smallholder maize farmers who are unable to keep their stock of maize grains for long when they need cash for their daily livelihood needs. In the final analysis, they get lower prices when yields are optimal and when prices increase when they could have earned increased incomes, it is mostly because yields were poor. Ellis (2010) posits that the situation where increased food output rapidly translates into falling food prices is, largely down to the relatively small sizes of SSA economies coupled with their limited domestic markets. He also points out that the Asian Green Revolution was successful largely because of larger local agricultural markets.

An old smallholder maize farmer posits that though it is difficult to predict maize prices, the existence of glut and shortage alternate from one season to the other because when people realize that maize grains gained prices for a particular season, more farmers cultivate maize and those who cultivated it the previous season would increase the number of hectares they cultivate. This then leads to a situation of supply outstripping demand which usually leads to a glut on the local market and prices inexorably plummet. Most farmers then get discouraged and less maize is cultivated and then due to low quantities of the grain available relative to demand, prices go up and the cycle continues. This alternate existence of glut and scarcity further exacerbate price fluctuations and

further diverges local producer price trends of maize from those at the international level, thereby, further destabilizing smallholder farmer incomes.

While prices of maize grains continue to be, largely, unstable – rising and falling within and between farming seasons at the smallholder maize farmer’s level, and consequently dwindling their incomes, prices of general goods and services which these smallholders use most of their incomes on, continue to show consistent and persistent price increases. The starting point of this persistent price increases is invariably petroleum price increases and its inextricable linkage to the prices of virtually all other goods and services as shown by the analysis in the section on petroleum price trends above. For instance, all petroleum products showed consistent price increases between 2008 and 2014 at the national level, with the exception of a couple of months prior to and after the 2008 Presidential and Parliamentary Elections in Ghana, apparently for political reasons. The mere interference with the petroleum products prices around the election contrary to the deregulation policy that was in effect and the trend on the international market is in itself, a tacit admission of the general effect that such prices have on the prices of general goods and services in the country. As Figure 8 shows, the 3 main products considered – premium petrol, diesel and kerosene all had an average price of about 112 Pesewas per litre in January 2008 but jumped to as much as 260 Pesewas per litre by January 2014.

The continuous rise of petroleum products’ prices, coupled with its close link with prices of general goods and services among other factors, have consequently contributed, in no small way, to price increases across the board. As the analysis in the previous section shows, prices of consumer goods which most of the smallholder maize farmers report spending most of their incomes on, increased – most of them by over 150% in the last 2 years, between 2012 and 2014. Increasing costs on farm implements, education of their children, and healthcare for household members in spite of the implementation of the NHIS, means that smallholder maize farmers’ expenditure is continuously on the rise while their incomes do not necessarily follow similar trends. An old female smallholder maize farmer encapsulates this situation by explaining that:

“Prices on everything are on the rise. The most important and yet increasingly expensive is soap, both for bathing and for washing our clothes. We also have to spend on cooking oil, sugar and clothes. Apart from these, my husband also spends a lot of money on school fees, hospital and electricity bills. Fortunately, the introduction of the insurance (referring to the NHIS) has reduced our hospital bills

considerably since now we only pay the annual premium of 14 GHC per each adult. However, school fees have doubled in the past 2 years while electricity bills have more than doubled in the last 6 months alone”.

The astronomical increases in electricity bills in less than a year is, largely, due to the government policy to remove all subsidies on electricity consumption, even for low-end consumers such as those in rural areas as part of a wider policy shift of continuously scaling back the state’s level of subsidies on even vital social amenities as electricity and water.

The end result of these two strands of prices trends is a squeeze from both ends. Smallholder maize farmers are faced with erratic prices for their maize grains at the local level where they participate in the chain which squeezes their income streams on the one hand, while prices of general goods and service that they spend most of their incomes on are consistently showing upward trends, and rarely, if ever, show price reductions.

5.5 Race to the Bottom?

This situation of double price squeeze from both ends, without any social safety nets, inexorably locks most of these smallholder maize farmers in a situation of eroding incomes in the face of ever-increasing expenditure. Kaplinsky and Morris (2001) christen this spiral as a race to the bottom. It describes a situation whereby the actions and inactions of economically vulnerable groups, inadvertently or otherwise, locks them in a poverty trap while those already below the poverty line have their depth of poverty worsen. Diminishing incomes in the face of burgeoning cost of living is usually an ideal recipe for a race to the bottom. The opposite of the postulation by Carter and Barrett (2006) that individuals and households who enjoy steady and favourable shifts in their terms of trade can steadily accumulate assets to grow out of poverty appears to hold true for most of these smallholder maize farmers.

Smallholder maize farmers in such a conundrum are generally more preoccupied with survival on a day-to-day basis rather than the accumulation of assets to break poverty entanglements that they are entrapped in. This then feeds into their choices which in turn make them even more vulnerable as their engagement with other chain integrators and actors in larger markets does not really benefit them. The observation by the CPRC Report (2008) that powerlessness is the root of all

poverty is germane since in such a situation, the more powerful actors of the maize value chain reap higher financial rewards by being able to erect barriers to entry of smallholders maize farmers to higher levels of the chain where terms of trade are more favourable, while locking them in a race to the bottom so that the more they try to extricate themselves from these low equilibrium poverty traps, the stronger they are locked in.

In sum, the continuous increases in fuel prices unavoidably leads to concomitant increases in transport costs and the general cost of production affecting the cost of everything that the smallholder has to purchase to get by. The prices of the maize grains that serve as the primary source of income and livelihood for most of the smallholder maize farmers, continuous to vacillate. Obviously, the terms of trade does not favour them. For these smallholder maize farmers, however, they do not have a choice as to whether to participate or not to participate in the chain, as the exigencies of contemporary globalisation, has taken that decision for them. The only decision left to them is *how* they relate with other actors in the value chains that they are engaged in. In other words, how do they adapt to survive in the face of this double price squeeze?

6. EFFECTS OF THESE DIFFERENT PRICE TRENDS AND SMALLHOLDER MAIZE FARMERS' RESPONSES TO SURVIVE

“Maize farming was a good source of livelihood for a number of years but not anymore. Formerly, it was cocaine which attracted everybody but now nobody wants to engage in it.”

- A smallholder maize farmer at Worawora.

6.1 Introduction

Having discussed the differences in the trajectories of the prices of maize that smallholder maize farmers receive on the one hand, and that of general goods and services that they need on a day-to-day basis on the other hand in the preceding chapter, this section will focus on how these differences in price trends affect the real incomes, and by extension, the living conditions of these smallholder maize farmers. In addition, it will also cover issues of how they are adapting to survive in the face of this squeeze from both ends.

6.2 Diminishing Incomes of the Smallholder Rural Maize Farmer

As the prologue at this beginning of this chapter suggests, maize farming is no longer regarded in high esteem as a viable means of attaining economic independence by smallholder maize farmers. This is contrary to what obtained a decade ago when maize cultivation was the main means of livelihood and virtually everybody cultivated a quantum amount of maize to some earn good income. The livelihood of the smallholder maize farmer at Worawora is essentially characterized by diminishing incomes, growing costs and the growing need to find more sustainable sources of income to make ends meet – be it in the cultivation of other crops or moving away, completely, from agriculture as a means of livelihood.

The maize market at the local level is typically without structure, bedeviled with limited trust and information, as well as inadequate institutional assistance. The lack of form and limited trust and information create fertile grounds for a few maize traders and middlemen, operating under oligopolistic conditions, to be able to exploit the smallholders at the lowest rungs of the maize value chain. It is, therefore, not surprising that a simple hear-say about mere intentions of a few maize

buyers could send prices of maize tumbling. According to a smallholder maize farmer: *“I heard a rumour that the price of the Olonka of maize was going to be reduced from 2 GHC to 1.50 GHC and within a day, most farmers had sold their grains at the prevailing price of 2 GHC. It turned out it was a false rumour started by a maize buyer to make farmers who were holding onto their grains hoping for higher prices to sell them”*. This illustrates the power of a simple rumour in such a market. Be that as it may, this also exemplifies a canker characteristic of maize markets at the level at which smallholders participate in the maize value chain. That middlemen, in their sheer quest for profit maximisation, would deliberately hoodwink smallholders into selling their grains at the lowest possible prices, is symptomatic of a market bereft of trust and timeous information for decision making. An older smallholder maize farmer also narrated how she decided to sell her last few Olonkas of maize grains based on such rumours only for prices to rise instead, and how she had to buy back from these same maize buyers at, sometimes, double the prices she originally sold her own stocks.

Even more interesting is how powerless the smallholder maize farmers feel in the face of such blatant manipulations, even when it happens year-on-year. The smallholders appear to have no say about how their grains should be purchased or for how much. Not only do they not have any negotiating power in these issues, but they do not negotiate at all, notwithstanding the fact that they are the primary suppliers of the grains. An older smallholder explained his predicament:

“A couple of years ago, a 50 kg bag of maize could get at least 50-52 Olonkas of maize but now I only get about 45 Olonkas for the same bag because the buyers either use slightly larger bowls or use the hands to support the rims of the Olonka. The last time, for example, I had a full 50 kg bag and I asked her to take it as one bag but she refused and insisted on measuring using the Olonka. I had no choice but to sell it that way”.

This apparent lack of negotiating power is borne out of two main factors. Firstly, by virtue of being smallholder farmers, their production levels often fall short of quantities that warrant measuring in bags even though the middlemen trade in bags with other chain actors at higher levels. Secondly, barriers to entry into higher echelons of the maize value chain such as the prohibitive transport costs, coupled with the requirement for the necessary financial clout means that middlemen are able to insulate their activities from competitions. The marketing acumen and connections as well as the organisational abilities that middlemen possess enable them to reap supernormal profits at the

expense of smallholder maize farmers. A smallholder maize farmer complained that: “*We are always being cheated by the maize buyers. As far as they are concerned, they do not care how much it costs us to produce the maize grains, they will always buy at their own terms and prices*”.

While the lack of negotiating power seems to cut across, there are a few exceptions of smallholder farmers standing their grounds and not giving in to the domineering posture of the buyers. A smallholder narrates how he refused to sell to a buyer when he realized that he was in for a raw deal if the sale was not curtailed: “*When she started measuring with the Olonka, I realized that she was using her palms to support the rims to get more of the grains in each Olonka and if that continued I was going to lose a couple of Olonkas of maize so I just told her to stop measuring because I had decided not to sell anymore. I drove her away*”. Further discussions with this smallholder gave further insights into why and how he was able to take such apparently decisive action when others would have shrugged and said they had no option and allow themselves to be cheated. Though he had wanted to sell his grains, he did not have an immediate need for the cash that would have resulted from the sale and so could afford to wait for a couple of weeks more. He concedes that he would have taken a different course of action if he urgently needed the cash. A female smallholder who is also a widow but owns a provisions shop explains that she is able to sell her grains in Accra at relatively better prices because she has other sources of income and she travels to Accra regularly to restock her shop. Her already planned trips to Accra enable her to overcome such barriers as transport costs while her regular visits have also enabled her to establish vital trading and marketing contacts in the city, thereby enabling her to access higher levels of the maize value chain that would otherwise be inaccessible to her.

Notwithstanding the above exceptions of the exertions of their rights to refuse to sell or bypass the lower rungs of the value chain to sell maize grains directly to higher chain actors at relatively better prices to improve maize farm incomes, the general situation is that of powerlessness whereby smallholders feel they have no choice but to sell at prevailing prices without the ability to negotiate. Maize buyers, being rational entrepreneurs, are always looking out for opportunities to maximize profits. The end result of this is a continuous decline in maize farmer incomes.

The chief-farmer of Worawora who is traditionally, the leader of all farmers in the town explains the etymology of the Akan word for *overseas* or *abroad* which is *aburokyire*, as consisting of two Akan words: *aburo* and *kyire* which literally mean *maize* and *behind* respectively. According

to him, the use of the term denotes the vastness of maize farms several decades ago when one had to climb a tree in the middle of a maize farm to be able to see the extent of that maize farm. He explains that maize farms have been shrinking in size for over a decade now, largely, due to the declines in maize grains prices and that more and more smallholder maize farmers are finding alternative sources of income outside of farming altogether. He expresses the fear that if this trend of declining maize grain prices continues, at some point, farmers might start questioning themselves if their efforts are worth it and this can have dire consequences for maize production, but also food security in general.

Some might argue that a reduced maize grain production might not have such a dire implication for Ghana's food security, given that food habits change over time and what is simple almost always wins in the race for the choice of food. It is, however, pertinent to note that the main alternatives to maize such as wheat and oat are not cultivable in Ghana by reason of climatic requirements. This implies that to rely on them will large imports using already scarce foreign exchange and then the prices might be such that the poor and most vulnerable in society would not be able to afford them. Besides, large-scale farms, as alternatives to smallholder farms, are not ubiquitous in Ghana and cannot be envisaged to be so in the near future due, among other factors, to the land tenure system which leads to continuous sub-division of farming lands. Hesselberg (2013) therefore, argues that the twin goals of a reduction in the number of poor and of a continuation of farming as a source of livelihood *for many* are incompatible. However, Birner and Resnick (2010) point out that policies that support small farms by correcting for the market failures inherent in smallholder agriculture, especially in the early phases of development, are a particularly promising strategy to achieve pro-poor growth, even if such policies are politically difficult to implement. I, therefore, cannot help but agree with Seville et al. (2011) view that agriculture remains the best opportunity for the estimated 1.5 to 2 billion people worldwide living in smallholder households to work and trade their way out of poverty.

When asked to compare their incomes from sales of their maize grains now to a couple of years back, it seems almost a common view among the smallholder maize farmers that incomes exclusively from maize sales are consistently on the decline. This decline appears to be mainly due to volatility in producer prices as well as, to a lesser extent, a result of the general reduction in the

scales of their cultivation. It is important, however, to note that the latter could be a consequence of the former. That is, increasingly less emphasis is being placed on maize farming as a means of earning livelihood in contemporary times than, say, a decade or more ago. Maize farming appears to have lost its allure among most smallholder maize farmers as a result of the predicament of inconsistent maize prices leading to dwindling farm incomes in the face of escalating costs of goods and services. This situation can potentially have important short and long term effects.

6.2.1 Short Term Effects

One of the main and immediate effects of loss of incomes in the face of rising costs is that the purchasing power of smallholder maize farmers is considerably diminished. The smallholders were asked if they were able to purchase the same quantity of goods and services which they had mentioned as the essentials on which they spend most of their incomes. The general response among the smallholders was indicative of diminishing purchasing power. A middle-aged smallholder maize farmer explained that: *“Of course I am not able to afford most of our needs. Even if incomes remained the same levels, which is not the case, it will be difficult to afford the same quantity as a few years ago because prices of continue to go up for such necessities as fish, soap and even farming implements. Five to eight years ago, most of my income was from maize farming. Now, it is not profitable as we cannot even afford our everyday needs”*. This diminishing purchasing power means that smallholders whose only, or even primary, source of income is maize farming have had to borrow cash from relatives and friends in difficult seasons to feed their households. Others also resort to buying what they need - mostly food - on credit basis with the intention of paying up for such credit purchases they have money available. A local store owner intimated that:

“Cash is hard to come by generally for farmers but it is especially so for maize farmers who do not engage in any other form of income-generating activity. They almost always buy things on credit with the promise of paying me when they sell their grains. However, the payment is not always as they promised since they buy on credit from other sellers as well. So for some of them, they cannot even come and ask for more purchases on credit because the credit buys are overdue and they have not been able to pay according to their initial promises”.

The situation is so dire that there are particular smallholder maize farmers who have become notorious for defaulting in the payment for their lines of credit simply because they have bought

goods on credit basis from numerous sources. In spite of the relatively high level of communality among the people at Worawora, such smallholders are known to have been tagged as not keeping their promises and so are usually refused further credit purchases. In line with this, Giesbert and Schindler (2012) argue that a household below the threshold is too poor to accumulate assets and that if such a household lacks the opportunity to borrow, the household remains trapped at a low welfare level.

A direct consequence of the above is the reduction in both the quantity and quality of their meals. When smallholders do not have other resources to fall on, and no assets to liquidate to get them through lean seasons until the next harvest, they are bound to cut down on consumption. This is especially so when creditors refuse them credit purchases. A middle-aged smallholder maize farmer who says *enam* is his major source of expenditure explained that: “*We used to be able to cook three times every day but these days, we usually do not cook in the afternoon and the children have to follow us to the farm when they close from school in order to come and eat. We also do not buy much meat and fish as before because we cannot afford it. It is cheaper to buy yams instead of meat*”. This implies that not only do they not eat adequate 3 square meals a day but even the two that they eat are likely to be deficient in proteins and other vital nutrients necessary for a balanced diet. Children of school-going age having to follow their parents to the farm after school hours just so they can eat can potentially have important implications for their educational attainments.

From the foregoing, it is clear that the current divergent trajectories of unstable and dwindling producer prices of maize at Worawora on the one hand, and burgeoning costs of goods and services due mainly to a multiplicity of factors, including the unstable Cedi, increasing prices of petroleum products and consequently ballooning transport costs, has dire implications for the purchasing power of the smallholder maize farmers. The reduction in their purchasing power has also had important implications for the consumption habits of the membership of their households. These can potentially have serious and irreversible long term effects.

6.2.2 Long Term Effects

While my study did not entail any long term data gathering fieldwork to assess the long term effects of smallholders’ inability to purchase basic needs such as foodstuffs, soap, and clothes, as well as

eating less in terms of quantity and quality of meals, it is not far-fetched to surmise that these actions and inactions potentially could have dire consequences for a number of facets of their livelihoods. Eating less food, say reducing the number of meals per a day from 3 to 2, as well as significantly cutting down or completely eliminating protein intake means that smallholders would be eating less balanced diets. It is not difficult to conceive the health implications for the whole household, but most importantly, the younger members of the household. More frequent illnesses can possibly increase their health costs.

Furthermore, if parents believe that they cannot afford the auxiliary costs associated with the children's school attendance, even under the FCUBE and the Capitation Grant programmes, the next logical step for such parents would be the withdrawal of their children from school or, at best, discontinue their education after attaining a certain minimum level. An older smallholder maize farmer explains how and why he curtailed his last son's education after the Basic Education level: *"I have 5 children, 2 girls and 3 boys and for all of them, I vowed to ensure that they completed, at least the SHS. However, for my last son, I could not afford it so after his BECE, I sent him to my son-in-law in the city to go and learn welding, though he had qualified to continue his education at the SHS level just like kids of his age. It breaks my heart but I could not afford for him to continue schooling"*.

Another important implication of dwindling farm incomes is that such smallholders become less concerned with asset accumulation and more preoccupied with day-to-day survival of their respective households. This implies that they are inclined to selling of their assets that took a couple of years to acquire just so that they can take care of an immediate need. A smallholder maize farmer explains how he sold two of his goats to pay for the examination registration fees for his son and to buy books for his daughter within a space of two weeks. Though these kinds of expenditure may be seen as future investment in his children, when it comes to it, it will not be surprising that smallholders might sell off such assets to buy foodstuffs.

It is important to note how all these feed into the reduction in the general quality of life of these smallholders. It is a process that culminates in them falling into poverty traps and those already in this low equilibrium, being locked further and deeper into such traps. By virtue of being poor, their actions and inactions, inadvertently or otherwise, contribute in diverse ways to locking them further in poverty cycles with no end in sight without any external help. The squeeze on their

incomes while their expenditures keep escalating leads them into a race to the bottom. It is pertinent to acknowledge that the above does not necessarily relegate smallholder maize farmers' agency to the background. While some may be reluctant to leave farming in general and maize cultivation in particular, they usually find innovative adaptation strategies to improve their livelihoods in the face of this price squeeze from both ends.

6.3 Adaptation Strategies

Smallholder maize farmers' agency and action in the face of the squeeze from both ends is crucial for their economic and social survival and sustainability. Scoones (1998) classifies three broad livelihood strategies that farmers usually employ as the range of options available to rural folks. These are agricultural intensification/extensification, livelihood diversification, and migration. At Worawora, all three broad options have been explored by the smallholders to varying degrees and success. I will, however, focus on the first two as migration to the urban areas is more pronounced among younger population who usually do migrate almost immediately after graduating from school – the JHS and the SHS – or dropping out of school and such demographic group neither see maize farming as their means of livelihood in the first place nor intend to go back to it at Worawora.

6.3.1 Improving Output through Intensification and Extensification

Agricultural intensification refers to the process of increasing labour inputs and/or capital investments in order to gain more output per unit area while extensification connotes increasing the area of cultivation in order to improve output. The general response of smallholders to suggestions of extensification was the assertion that increasing maize farm sizes was not the best way to deal with the gain price problem. A middle-aged smallholder maize farmer argues that: *“Increasing the number of hectares might help, to a certain degree beyond which it is pointless if prices do not improve. This is because larger farm plots would require hired labour and expenditure on weedicides since I cannot maintain it all by myself”*. Another middle-aged smallholder who cultivates on other peoples' lands concurs when he explains further that:

“Increasing farming plot sizes ends up being the same thing because what I end up getting as income does not really change much. This is because by adding a hectare

or two to my usual farm size increases my costs as well – I have to pay more workers to clear the land, buy more weedicide, and hire more labour during harvest. It is even worse if one is farming on other people’s land because then, one has to subdivide the output and the landowners take one-third of the maize output. In fact, it is more profitable, in this sense, to lease lands to other maize farmers than to engage in the actual farming as a landowner since as the latter, you do virtually nothing and get one-third of the output while the actual farmer who bears all the costs. In the end, you see the maize farmer going to the farm every day and yet there is no improvement in his life and he is always struggling to subsist”.

This implies that, as far as he is concerned, the additional investment or labour to intensify production is, largely, not worth it as the benefits to such endeavours is meager at best. It also shows that increasing the area under cultivation is not an ideal option for most smallholder maize farmers at Worawora, particularly those who cultivate maize on other peoples’ plots and share the output with the landowners as it does not effectively buffer them against the worst effects of dwindling maize grain prices. With regards to intensification, most of the smallholders I spoke to, as indicated earlier, do not view investing in weedicides and fertilizers as a prudent option in their bid to boost their maize production. They view that investment as waste and would rather invest such resources in off-farm activities.

An interesting development which a few of the smallholders are exploring in their quest to boost their maize farm incomes, however, is to harvest and sell their maize when it is fresh as a fruit¹⁹. When it is harvested freshly as a vegetable, the unit of sale is not the Olonka but rather, it is counted cob by cob on the farm and sold at the farm gate to buyers who then cook or smoke them and sell them at a profit. Even with this, the buyers make much more profits than the farmers but at least the income of the smallholder maize farmer is boosted significantly if they sell their produce as fresh corn. Besides, selling the corn in its fresh form relieves the maize farmer of other post-harvest activities and costs such as those expended on transportation of the harvested maize to the house as well as those on storage. A smallholder maize farmer explains his decision to sell his maize produce in its fresh form: *“The cookers usually sell it at 3 corn cobs for 1 GHC but even when they buy it at 6 corn cobs for 1 GHC at the farm gate, the maize farmer who harvests and sells his/her corn this way is better off compared to the one who waits till it is dry and then sells it by the Olonka. Another*

¹⁹ In this form it is termed corn and is harvested before it reaches maturity and kernels become dry, and it is eaten as a vegetable.

good thing is that, even when I sell my fresh corn, I will surely be left with some that will dry to be used for domestic consumption". Curiously, it is usually the corn that do not do so well that are left to dry to be used for household consumption in this scheme of harvesting fresh corn. This is because the buyers on the farm would normally select the corn with the larger cobs for their business. Perhaps the only downside to this system is that incomes arising from corn sales come in bits and not in a lump sum and so the farmer ought to be disciplined enough to be able to save regularly from farm sales rather than spend the income earned. This ability to save in bits interestingly also requires that such smallholders have multiple sources of income that they rely on.

Another approach employed by smallholder maize farmers at Worawora in a bid to augment farm incomes is the intensive cultivation of the variety of maize which is used for making popcorns. The popcorn maize does not require much rainfall in terms of volume and distribution and so is quite ideal to cultivate it in the minor season which usually starts around December and January. It might also do well in the major season when the rains are inadequate for the traditional white maize variety. A middle-aged smallholder maize farmer narrates how he took just a cob of the popcorn variety from a friend of his and planted it at the end of January and how it did so well. He intends planting the output on a larger plot next season and if it does well, he hopes to specialize in the cultivation of that variety with the cultivation of the white maize being done only on a limited scale for household consumption. He explains his intention:

"The thing about the popcorn variety is that the yield per hectare is lower than the normal white maize variety. Where one could get, say, 4 bags per a hectare for the white maize variety, one only gets about 2 bags for the popcorn variety. The good thing, however, is that the farmer earns more money from the 2 bags of the popcorn variety than the 4 bags of the white variety. The Olonka of the popcorn goes for around 9-11 GHC and in seasons when production levels are poor, it is even measured with a smaller bowl²⁰".

Another smallholder maize farmer who also cultivates the popcorn variety explains another advantage of cultivating it: *"It involves lower costs in terms of storage as it is more resistant to pest infections in storage compared to the white variety. This being the case, I do not have to spend several hours a week spreading the grains on cemented floors or alternatively, spend extra cash on pesticides for storage"*. By virtue of the popcorn being less prone to pest infection, smallholders do

²⁰ The smaller bowl being referred to here is 1/6 of the Olonka.

not have to use some of their already squeezed incomes to store their grains, and this is a strong motivating factor in their decisions on intensification and extensification. Again, with the popcorn, just like most other agricultural commodities in general and maize farming in particular, the next link up in the value chain benefits more from the toils of the primary producer – the smallholder farmer. According to a middle-aged female smallholder maize farmer, *“a popcorn maker who buys a 1/6th of an Olonka for 1.50 GHC earns more than 5 times that amount when the corn is popped and prepared for sale”*. While this trend of earning the least in a given value chain appears to transcend most agricultural produce, some smallholder maize farmers appear to believe that incomes are better in other crops compared to maize farming.

6.3.2 Becoming Multi-Crop Farmers

Engaging in multiple crop farming is another adaptation strategy that smallholder maize farmers who are being squeezed from both ends adopt to survive. As one smallholder succinctly puts it: *“You see, now, nobody depends on maize farming alone for livelihood, otherwise my household will starve to death. One has to engage in the cultivation of other crops so that if maize prices do not do well, these other crops can support my incomes. I have to adapt to survive”*.

This *adaptation in order to survive* by cultivating other crops is quite common at Worawora. These other crops include yams, cassava, groundnuts, plantains, and rice. The smallholder above touts groundnut as a dependable source of extra income by explaining that: *“Now even fresh groundnut has better prices than maize grains. An Olonka of groundnut sells for 4 GHC and yet that of maize is 2 GHC and there are even rumours of that of maize dropping further to 1.50 GHC. This is despite the fact that maize cultivation and harvest is more labour-intensive compared to that of groundnut”*.

In addition to groundnuts, most of the smallholder maize farmers spoke in glowing terms about the higher-income earning abilities of rice as an alternative to maize at Worawora. A middle-aged smallholder opines that: *“If one is cultivating on another’s plot of land on the principle of sharing the crop output, one is better off cultivating rice rather than maize. This is because, while the division principle for maize is one-third of the output, that for rice is just a 50 kg bag for the landowner. Besides, the yield per a hectare for rice is higher than that of maize though the former is*

more labour-intensive". This also means that it makes sense for rice farmers to improve crop output through intensification and extensification methods than it does for maize farmers. Another middle-aged smallholder maize farmer who has been cultivating maize for more than 15 years said he plans to cultivate more rice while conceding the high labour input it requires: "*There are better incomes in rice farming but it is more difficult. It is not every farmer who can engage in rice farming because it goes with some health risks. My neighbour, O.B.²¹ who does rice farming every year has had his fingernails rotten due to constantly dipping them in the muddy waters. His toenails are only protected because he wears the boots*". The health issues surrounding the cultivation of rice appear to lose weight, however, as one smallholder maize farmer explains that a new variety of rice has been introduced in the community which is able to thrive even on non-marshy lands where one would usually cultivate other crops such as maize. This means that farmers will not have to work in swampy conditions for several hours a day when cultivating rice.

Another smallholder maize farmer who has not cultivated rice before explains why he is willing to start cultivating rice beginning from the next season: "*The yield per hectare is much better than maize. Personally, I have not done rice before but I am told that one could get as much as 5 bags from just a quarter of a hectare. Furthermore, unlike maize, the same measuring bowl is used every year and the refurbishment of the Worawora Rice Mill means that there is ready market for rice output*". This is significant in that apart from sturdy prices, assured markets for agricultural commodities at the local level is a strong motivating factor for smallholders to increase their production levels. It is, therefore, not surprising that a number of smallholder maize farmers are veering into rice cultivation. This also underscores the importance of government support mechanisms such as price supports and input subsidies (Ellis 2010). It is noteworthy, however, that most of these smallholders still intend to cultivate maize, albeit, on a more limited basis, even if just for household use.

Cassava is another crop that is gaining traction among smallholder maize farmers as an alternative to maize cultivation in terms of earning better incomes. A smallholder illustrates this when he claims that:

²¹ Neighbour's name is initialized for purposes of protecting his anonymity.

“Now cassava cultivation is more beneficial and profitable than maize. A 12-meter square cassava (for fufu) farm sells for 120 GHC.²² Even cassava for the preparation of dough has better prices because half a bag of cassava dough sells for about 150 GHC. As I sit here now, if you gave me a lump sum of, say, 1,000 GHC, I would invest it in cassava cultivation rather than maize. Formerly, maize was the crop of choice but not anymore”.

The above suggests that maize is losing its appeal as the crop of choice amongst most smallholders at Worawora though it is still cultivated by almost every smallholder farmer, albeit, to varying levels. It is also noteworthy that some smallholder maize farmers engage in the cultivation of other crops on minor basis just so they will not have to expend their increasingly scanty farm incomes on these other crops. Nevertheless, other crops are gaining popularity as the income-earning capability of maize grains is being eroded, largely, through unstable prices.

6.3.3 Diversifying into off-farm Economic Activities

Diversification to a range of off-farm income earning activities is another adaptation strategy employed by some smallholders maize farmers at Worawora. The smallholder maize farmers were asked if they engaged in any non-farm economic activity and what those activities were. The responses were varied and numerous. They ranged from animal rearing, shop keeping, timber lumbering and carpentry to those who became auto-mechanics and lottery agents. The attractiveness of off-farm economic activities to these smallholders dawned on me in the first few days in the field when I approached a maize farmer who used to cultivate a minimum of 4 hectares of maize every season to strike an interview deal. Though he was eager to speak to me about maize farming, he made a quite revealing comment that: *“Who cultivates maize to make a decent living these days? Nobody! There is no future in maize farming as an income earner. Other than rice farming, I do more lumbering²³”*. He had the lumbering machine right by his side and was making preparations to go to the forest. He explains how lucrative lumbering can be compared to maize cultivation:

“One cannot rely on only agricultural sources of income so I do lumbering and, believe me, I get much more from it than I could make from maize farming for the

²² Cassava is one of a few crops that the farmer does not always have to harvest and transport to the house but rather it can be sold while still not harvested so the buyer does the harvesting as and when he/she needs to.

²³ The last sentence was spoken conspiratorially as lumbering trees that are outside the farmers' personal land that they farm on is a crime due to its contribution to deforestation.

whole season. Some people plant timber on their farm lands purposely for lumbering and they sell these trees to us lumberers. If I loaded a 40-foot container with lumbered wood, it would have cost me about 2,000-2,500 GHC and yet I could sell it at Tema for up to 4,000 GHC. If I took out the fuel and other costs, I still would have made more from a couple of weeks' work than I could have made from maize farming for the whole season”.

He however, explains that this is the legal side of his business and that due to capital constraints to invest in buying the trees from the owners he sometimes dabble in the illegal chainsaw operations whereby he cuts trees in the forest but *“the forestry officials are a constant threat to our business. They hear the sound of the machine and they trace it to the heart of the forest where we usually work and seize the machine. I had to pay a huge fine a few weeks ago before they released my machine to me”*. While the above illustrate how lucrative the lumbering venture is, it also shows the extent that people are willing to go to earn a decent living.

Apart from lumbering, some young and middle-aged smallholder maize farmers typically take time out to learn a profession such as auto-mechanics, masonry or carpentry to support their household income sources. A middle-aged smallholder maize farmer explains that:

“Sometimes, one can increase farm sizes to improve incomes but in seasons when prices are no good, one is better off investing more time in other activities. I cannot stop maize farming completely because it has become something of a legacy in my family. However, I have apprenticed as a carpenter so that brings some money home though sometimes it demands me travelling to neighbouring towns for a couple of days. Overall, I think am better of spending more of my time on the carpentry side and less times on maize farming. In years that maize prices look promising, I can even buy some maize grains and later sell at a profit”.

It is noteworthy that he was able to use his income from maize farming to pay for his apprenticeship in carpentry a few years ago but does not think that would be possible seeing as maize farm incomes are dwindling.

Another middle-aged smallholder maize farmer indicated that besides maize cultivation, his other main source of income is his job as the local agent for the National Lottery. He explains that since he took that job, he has been earning good commissions on lottery sales even though it means he does not go to the farm on Wednesdays and Saturdays which are the main lottery days. Interestingly, he was in the middle of explaining the additional income from this off-farm income

source when his wife, who was preparing the evening meal a few meters away but was within earshot, interjected that he uses most of the income from that source to stake the lottery himself and that in most cases, he does not win and even occasionally when he wins the winnings are paltry compared to the amounts he had expended over the period.

The same middle-aged smallholder explains that he also rears animals to supplement incomes and that he prefers goats to poultry because, in his estimation, the former is less susceptible to disease infections and death, compared to the latter. He goes on to explain how he was able to solve a problem of an immediate need for cash by selling one of his goats to the local butcher. He also claims that even though he needed the cash urgently to pay for his son's examination registration fee, he was able to negotiate a good price for the goat which is usually not the case with maize grains.

A female smallholder maize farmer, in her early 50s, said she devotes more of her time and energy to shop-keeping now compared to 5 years before in order to earn more income. In her small wooden shop with corrugated iron sheet roofing, she sells supplies and provisions such as sachet and bottled water, vegetable cooking oil, fruit drinks, toilet soaps and detergents, salt, sugar and biscuits. She explains why and how she branched out into shop-keeping:

“I used to cultivate up to 4 hectares of maize every season and I would usually invest moneys sent to me by my children in the city for my upkeep into the farm but then I realized it was not helping. So I saved the remittances and built the shop and then bought a refrigerator and then I then appealed to my children to help me stock the shop. At the very least, unlike maize grains, I am in control of how much I sell these goods so that when prices go up in Accra, I can also increase prices and ensure that I make some profits. Now I feel it is much better to put more energy and time into operating my shop so, though I still go to the farm as early as 6am, I return before noon in order to open the shop. This is different from some years ago when I usually spend practically the whole, 6am to 6pm, on the farm”.

The above view on pricing is pertinent because while consumer goods, such as those she sells in her shop have their prices continuously rising, she, the seller is still in control of how much she sells them and is in a position to ensure profitable operation of her business. The same cannot be said for maize prices whereby, to a large extent, the terms of trade, including prices is determined by the buyer and so more often than not, the smallholder maize farmer who is the seller, loses out in the transaction.

6.3.4 Remittances

In addition to Scoones' (1998) classification of livelihood strategies, one other key way that some of the smallholder maize farmers, especially the older folks and women, are able to make ends meet in the face of the squeeze from both ends is through remittances. It is different from the other adaptation strategies in that it does not come about as a result of the smallholder maize farmer agency. Nevertheless, it offers an important avenue to survive in such difficult economic circumstances. Remittances do not only play important roles in their day-to-day consumption, they also sometimes serve as a source of capital when an investment needs to be made. This investment could be into their children's education, their maize farms where they use the monies sent to them from relatives living in urban areas to intensify and extensify cultivation or even on their off-farm income generating venture. An old female smallholder maize farmer explains how she regularly saved monies her children living in Accra sends her which enabled her to build her provision store. An interesting dynamic of remittances relative to the persistent increases in the prices of consumer goods at Worawora is that, it is becoming more and more common for smallholders to request that relatives sending remittances use such monies to purchase consumer goods such as soaps, cooking oil, tinned tomatoes and bread so that such items could be sent instead of the cash. This is likely to be because they believe that even with the same amount of cash, they would not be able to purchase the same quantities of goods at Worawora.

6.4 Key Observations

From the onset of the fieldwork, I set out to observe the smallholder maize farmers in their homes during interviews to gain insights into their economic circumstances in terms of what kinds of *luxuries* they are able to afford. I intended to do this observation with reference to other variables such as whether those who appeared to be relatively well-off were those who sell their grains immediately after harvest or those who are able to wait till prices go up, those who cultivate on their own lands or leased lands, and whether smallholders' economic circumstances has any correlation with how long they had been cultivating maize. Finally, I also intended to observe any correlation between their engagement in off-farm income earning activities and their economic wellbeing. The observations I made were quite revealing, even if inconclusive.

I find that one of the most conspicuous features of a household which is relatively well-off is not just the ownership of a working television set, but in addition to that, was the use of a Multi-Television Receiver and Dish which enables the receipt of up to 30 digital television channels just like in urban areas such as Accra and Tema rather than just the 2 traditional channels which are usually available in rural areas. Generally, those who are able to afford this *luxury* at Worawora are government employees such as Police Service personnel, Headmasters and some teachers of Junior and Senior High schools, higher level employees at the town hospital as well as a few privately employed persons such as those at the local branch of the Asubonten Rural Bank as well as the relatively well-to-do self-employed.

A key observation was that smallholder maize farmers who owned this *luxury* item were usually those who spend more of their time and other resources in other income-generating activities other than maize cultivation. This category of smallholders includes, but not limited to, a farmer who is also a carpenter and sometimes travels beyond Worawora for several days, as well as a female smallholder who is also a shopkeeper. Her situation is even more interesting because, in addition to operating the provisions store, she is able to sell her own maize grains which is her share of other farmers' output by virtue of the fact that they cultivate the maize on her family land, as well as some grains she buys from other smallholders at Accra at much better terms. This means that, not only is she able to overcome the barriers to entry to other links in the maize value chain, but she is also able to deal directly with higher chain actors to improve her income earning capabilities. She is able to do this, mainly, because she gained such attributes as marketing skills and connections with chain integrators by dint of her regular travels to Accra to purchase goods to restock her shop, which also serves to reduce other costs relating to transportation.

It appears, therefore, that the most successful adaptation strategy at Worawora is diversification as, generally, incomes improve substantially and livelihoods are enhanced significantly when smallholders and their households were able to diversify into other off-farm activities or move up the maize value chain by selling their grains in larger markets rather than selling it in their individual homes. This, however, requires an initial amount of capital to invest as well as human assets such as marketing knowledge and skills in these higher chain links, which smallholders generally lack which then serve as barriers to entry to them. It is, however, not possible to conclude that these smallholder maize farmers are relatively better off economically because they

have other, more reliable, sources of income or the other way around – that they engage in other income-generating activities because they are relatively well-off. Either way, there appear to be a common perception among the smallholder maize farmers that one cannot live comfortably if one depends on maize farming alone or even depend on it as their main means of livelihood. But without the initial capital, smallholders are virtually locked in a poverty trap.

7. CONCLUSIONS

7.1 Introduction

This final chapter will cater for the summary of my thesis. I will, therefore, touch on the major findings from the field with regards to the comparison between the price trends of the local producer price of maize grains and that of consumer goods that smallholder maize farming households usually need as well as the effects of these price trends on the real incomes and, consequently, the standard of living of the smallholder maize farmers. I then relate the usefulness of the framework of the value chain approach to the findings of the study. I then reflect on the usefulness of the findings and their relevance to other maize farming regions of Ghana as well as other countries. I will then briefly touch on possible areas for future research.

7.2 Summary of Findings

That maize cultivation is an important and integral part of livelihoods at Worawora is beyond doubt. That poverty is most endemic among food crop farmers is also well-documented. If SSA is ever going to be able to replicate, even a semblance of, the Asian Green Revolution, one of the key areas that needs to be addressed is its agricultural markets. While many studies that have to do with smallholders and their livelihoods have generally dealt with the effects of souring grain prices on the households' ability to afford food (Wodon and Zaman 2008, Ortiz et al. 2011, Dorward 2012) or its effects on nutrition and food security (Ivanic and Martin 2008, Zheng and Hennery 2012), this thesis has focused on an essential component of the living conditions of smallholder maize farmers, namely, their cost of living relative to their incomes.

In seeking to answer the research questions, I employed the qualitative research methodology of data creation including in-depth interviews, group discussions, observations as well as the utilisation of secondary sources of data. All these were done within the framework of the value chain approach and the concept of poverty traps. The analysis of the data created brings to the fore the following findings with regards to the comparison between the local producer price of maize and the consumer goods that farming households usually need:

Firstly, I find that maize producer prices at the local level continuously show high degree of instability within as well as between seasons and they do not seem to follow trends at the global level – at least not within similar time lines. That is to say, while prices increased fairly progressively, peaking in the second quarter of 2011 at the global level as shown by Figure 6, and has remained fairly high, rarely dropping below US\$250 per a tonne, prices at the local level of the maize value chain at which smallholder maize farmers engage with other chain actors, continue to exhibit wild variations, as low as 2 GHC per Olonka to as high as 4.50 GHC per Olonka, sometimes within the same farming season. Pertinently, the apparent poor price transmission between the two markets means that within the last five years, maize grain prices peaked on the international market in the middle of 2011 while at the local level at Worawora, smallholder maize farmers only experienced peak prices a little over year after that. The finding that local producer prices show variability both within and between seasons was not that surprising to me as it was expected. The surprise was the degree of variability, especially within particular seasons whereby prices could virtually double or otherwise, halve, within the space of a few months.

The wild price variations at the local level, even when those at the international level have largely stabilized, would not be much of a problem, if smallholders were willing and able to hold onto their maize grains and only sell them when prices appreciate. This is, however, not the case. I find that most smallholder maize farmers are quite eager to sell their maize grains as soon as possible, largely because there are no guarantees of price appreciation even if they held onto their grains. Besides, keeping grains for future sales implies additional costs on storage that they would rather do without. This is contrary to what I expected because my initial premonitions were that farmers, being economically rational, would keep their maize grains when prices are relatively low until they appreciate in order to gain improved prices. Their risk-averse behaviour encapsulated in their unwillingness to speculate on the trend of future prices was therefore interesting. I also find that, the market at the local level is without structure and bedeviled with a lack of trust which creates conducive grounds for the exploitation of smallholder maize farmers by middlemen who trade in maize grains. This level of exploitation is possible because the smallholders appear powerless, which is, in turn, a result of their precarious economic circumstances. As a consequence, they have become mere price-takers without the ability to negotiate for a produce for which they are the primary producers. The net result of the above is continuously dwindling prices of maize grains at the local

level where most of them have to sell their maize grains (IFAD 2009), and consequently, they are faced with diminishing maize farm incomes.

This finding of poor producer prices being a major challenge for smallholder farmers is contrary to that of the study by Hesselberg (2013) study in northern Ghana in which smallholder farmers maintained that producer prices were not the most important factor for choice of crop to grow. For them, getting good harvest was more important than prices but it appears their preoccupation is borne out of the fact that that part of Ghana is known for inadequate rains so their choices of crop is based on which crops can withstand the arid climatic conditions.

On the cost side of their livelihood, I find that smallholder maize farmers are subjected to escalating prices of goods and services which they and their households need to lead normal and decent lives. The divergence in price trends at the two levels of markets only occurs at the income side of their livelihoods. On the expenditure side, prices generally move in tandem. The level of price transmission for the cost of goods and services is effective, so much so that, sometimes, prices at the local level escalate faster than those at the global level. This discrepancy, I find, is down to two main factors. The first is the general spatial variation of prices of goods, particularly characteristic of developing countries which is mainly due to poor transportation infrastructure and leads to high transportation costs so that prices of consumer goods increase as one moves away from the central towards peripheral economic regions. The second reason why prices of consumer goods are generally higher in rural areas, such as Worawora, compared to urban centres has to do with the very fact that prices are increasingly on the rise. This makes dealers in such consumer goods cautious of the possibility that if they do not quote prices much higher than the actual cost price, before factoring transportation and other operating costs, they might not be able to restock their shops when current stocks run out. This implies that sellers of such consumer goods almost always quote prices with the expectation that wholesale prices at the centre would have increased by their next restocking trip. This, however, means that, at any point in time, prices of these consumer goods at Worawora are markedly higher than those in urban centres, not only by transportation and other operating costs, but also by the expectation of possible future price increases.

Again, while I expected that prices of consumer goods were generally on the ascendency, I was surprised by the finding that their prices were higher in rural markets such as those at Worawora, compared to markets in the city. I was surprised by the finding that the prices of such

goods as soap, cooking oil and bread were relatively higher at Worawora than in the cities, to the extent that, as a coping strategy, smallholders who usually received remittances from relatives in cities have started requesting for these goods instead of cash remittances.

The origin of this consistent and persistent increases in the prices of goods that smallholders purchase, I find, is the burgeoning prices of petroleum product, not just based on world market price changes but more importantly, the result of the policy of deregulation in the energy sector of the country so that the full costs, including taxes, are wholly transferred to the final consumer. Even more interestingly, prices of consumer goods increased in anticipation of future price increases for petroleum products. The continuous price increases in consumer is further exacerbated by increasing loss of value of the GHC against the major trading currencies so that even when prices remain stable on the global markets, those at the local levels continue to rise. This has culminated in the situation where the major drivers of smallholder maize farmers' expenditure such as meat and fish as well as other foodstuffs that they do not cultivate on the farms, soaps, cooking oil, clothes, and tinned tomatoes, have experienced significant price increases in the 5-year period, in some cases, more than doubling in the last 2 years alone. This finding of instability in producer prices in the face of a constant increase in the prices of consumer goods is in consonance with those of Hesselberg (2013). This effectively means that smallholder maize farmers are faced with reducing incomes in the face of escalating costs of living – a squeeze from both ends.

With regards to the effects of this divergent price trends on the real incomes of the smallholder maize farmers, which is the second part of my research question, I find that this squeeze from both ends is having significant effects on them, not only for the short term but potentially for the long term as well. Their purchasing power is severely diminished so that the most affected of them resort to purchasing necessary consumer goods on credit basis which they are invariably unable to pay up and are consequently denied further credit purchases. As a consequence, not only are some of them selling off assets that took them several years to accumulate, but they are also cutting down on consumption, both in terms of quantity and quality. They do this by reducing the number of meals per day from 3 to 2, as well as the quantity of protein sources in their meals. With children having to follow adults to the farm after school in order to eat dinner and less purchases being made for fish and meat, the long term health and academic prospects of these children is put into jeopardy. Their choices only serve to make them more vulnerable and entrenches them further and deeper into

poverty traps as their primary preoccupation then becomes survival rather than growth and flourishing. Yaro (2002) agrees with this position when he argues that increasing smallholder expenditure without concomitant increases in their incomes as a result of low prices of their products and land degradation increases the depth of poverty among such farmers and that poverty could be abated with the stabilisation of expenditure on goods and services and growth in incomes through increased demand for agricultural products.

With regards to their adaptation strategies, I find that, generally, the smallholders, surprisingly, dislike increasing farm sizes as a way of improving farm incomes since extensification usually requires additional investments in labour and inputs costs that they will rather do without. Smallholders believe increasing the area of cultivation is largely imprudent, especially for those who cultivate maize on other people's lands and share the output with the landowners. Some literature such as Ellis (2010), however, blame shrinking farm sizes on the increasingly smaller plots of land available to farmers due mainly to the land tenure system of family inheritance. I also find that, as a way to boost their farm incomes, some of the smallholder maize farmers have resorted to harvesting their corn as a vegetable rather than wait till the kernels dry while others are beginning to cultivate the popcorn variety on a larger scale. These two approaches effectively sidesteps the buyer-driven value chain currently operating at Worawora and by so doing, they hope to improve their incomes.

In the same vein, some of the smallholders have also resorted to cultivating more of other crops, chief among which are rice, cassava, yams and groundnuts. Rice, in particular, is most appealing to them because of the refurbishment of the rice mill at Worawora which purchases rice directly from farmers, thus cutting out middlemen in the value chain. This response as a adaptation strategy is also observed by Nabuguzi (1993). More pertinently, diversification to off-farm income generating activities appears to be the most effective adaptation strategy in a bid to boost livelihoods. The initial capital to invest in these off-farm income generating endeavours is, however, only possible through external help such as remittances else it would take several years to save from meager farm incomes. While reducing the time they spend on their farms and increasing that which they spend in their shops selling goods or doing carpentry substantially improves their incomes and livelihoods, the implications for food production and, by extension, the food security of Ghana in the long run has yet to be quantified.

In a nutshell, the livelihood of smallholder maize farmers at Worawora is characterized by diminishing maize farm incomes, escalating costs of essential goods and services and the growing need to find more sustainable sources of incomes to make ends meet. The price squeeze from both ends has ultimately led to a general reduction in the real incomes and, hence, the quality of life of the smallholder maize farmers and their households. There is no gainsaying the view that the first MDG, eradicating extreme poverty and hunger, has not been achieved and unless there is a paradigm shift in how smallholders and local markets interact, the new timeline of 2030 will come to pass without any headway having been made with respects to poverty eradication or even reduction.

7.3 Usefulness of the Value Chain Approach

It is obvious that globalisation, as it operates in contemporary times, does not favour and augur well for the smallholder maize farmers as on the one hand, it effectively transmits price increases of consumer goods from central markets to peripheral markets while on the other hand, increasing prices of maize grains at central markets do not necessarily and automatically transmit to peripheral markets with the same level of efficiency. This was found to be largely a result of the kind of maize value chain that smallholder maize farmers engage in.

The value chain approach offers a unique perspective of the situation of smallholder maize farmers in that it helps explain the price differentials that occur between producer prices that operate at the point of entry of smallholder farmers and the market prices at regional, national and global levels. The starting point of any discussion is to determine the type of value chain that the smallholder maize farmers are engaged in. From my discussions with them, and based on expositions by Gereffi (1994) and Kaplinsky and Morris (2001), it was clear that they were predominantly engaged in buyer-driven maize value chains. As indicated earlier, Gereffi (1994) explains buyer-driven chains as those in which a buyer or a few buyers control a large number of producers and in which the actions of just one buyer can potentially change key dynamics of the chain such as prices. The discussions showed this when prices can decline suddenly by the mere decision of a buyer or a few buyers at Worawora to purchase the grains at prices lower than the prevailing price levels and to unilaterally decide to change the medium of measurement. The very nature of agricultural markets, which are essentially volatile, coupled with the oligopolistic powers

of the few buyers means that the buyer-driven chain puts the smallholder maize farmer at the behest of the buyer.

The power dynamics in a value chain approach is also valuable. Gereffi (1994) postulates that many chains usually feature a dominant party or parties which determine the overall character of the chain. Since the one available at Worawora that the smallholders engage in is essentially buyer-driven, the power dynamics is inexorably skewed against the smallholders. The mere existence of only a buyer-driven chain places enormous limitations on the smallholders who do not appear to have any option than to engage with a chain in which they are bound to be exploited. Kaplinsky and Morris (2001) explain that power asymmetry in the chain determines who wins and who loses since it enables the more powerful party to, overtly or covertly, coerce other parties, to take particular actions while being deaf to the demands of the less powerful parties in the chain. This is aptly exemplified by a smallholder maize farmer who was told by a maize grain buyer that he, the buyer, would have to use an Olonka slightly larger than the standard one for the prevailing price otherwise the price would be changed on the spot and the consequent acceptance by the farmer on the grounds that he needed the cash at the time. Mitchel et al. (2009) explain that, usually, sheer economic power is used by the more powerful chain actors to extract value to the detriment of the less powerful.

Another point of usefulness of the value chain approach concerns the postulation by Kaplinsky and Morris (2001) that power and governance cannot be assumed to be static and centrally located. While governance may be concerned with setting parameters which delineate conditions of participation such as quality and price, the locus of power changes rapidly in such buyer-driven chains. This is amply demonstrated by the price level being originally determined by traditional leaders of the farming community but the buyers being able to quash such price parameters and set their own without any consequences.

Another key concept that the approach brings to the fore is that of barriers to entry – an important determinant of the distribution of returns from participation. The more powerful chain actors are usually able to erect these barriers to insulate themselves from competition. From my interviews with the smallholder maize farmers, the single most important barrier to their entry into higher links of the chain they are currently engaged in or creation of parallel chains which would be producer-driven, is the lack of the necessary financial wherewithal. Apart from financial barriers, a few of the farmers also point out the marketing acumen and connections that the maize traders as

chain actors, have been able to accumulate over the years in the business, which the smallholders essentially lack. Kaplinsky and Morris (2001) expound that these barriers enable chain integrators and the more powerful actors of the chain to protect themselves from competition, thereby, accruing rents in the form of supernormal profits.

It is pertinent to note that notwithstanding the fact that the smallholders occupy the lowest rungs of the maize value chain, the perspectives and experiences relative to chain activities are integral to both the functioning of the whole system. As Mitchell et al. (2009) points out, the approach is particularly apropos for analyzing poor producers in developing countries who are attempting to insert themselves into global markets in a manner that would provide for sustainable incomes. In this light, its utility in explaining income differentials among the various chain actors, chiefly based on their economic clout is quite revealing of the dilemmas that smallholders contend with and why their incomes might be falling even when prices on the global level are on the rise as well as the limited and unsustainable choices they are usually confronted with.

Again, at the lowest end of the chain, smallholders face the highest barriers to entry into higher and more profitable links and have the least power among all the chain actors. Overcoming barriers to entry into higher levels of the maize value chain has the ability to not only to improve their incomes but their livelihoods as a whole in the long run. In this direction, IFAD (2012) argues that improving smallholder farmers' access to in the higher echelons of the chain could tremendously improve their incomes. Failing to overcome these barriers, alternative chains that are producer-driven would improve their lot in such a situation of squeeze from both ends.

7.4 Reflections on the Findings

The high variability in producer prices between seasons as well as within seasons at the local level has important implications for smallholder farmer incomes. For starters, such variability does not allow for reliable forecasting and planning for any meaningful length of time by the farmers because of the haphazard behaviour of price trends. This inexorably affects farmer confidence and the willingness to intensify production. Unstable prices also mean that lending institutions will not be too eager to assume the high risks involved in lending money to such smallholders maize farmers. Estimates that as much as 90% of lands under maize cultivation are on plots of less than 1 hectare

(MoFA 2006) and that, as was stated earlier, which indicate that yield per hectare is at an abysmal 1.7 tonnes per a hectare when 6 tonnes per a hectare is achievable (MoFA-SRID 2011), both highlight the need for intensification.

Furthermore, though most of them usually sell their maize grains as soon as possible, rather than wait till later when prices could possibly improve, they do not favour storage, largely because of the limited options available to them and so a social provision of such simple infrastructure as storage warehouses will go a long way in encouraging them to keep their grains a bit longer. This will not only provide stable prices as the local maize market will not be flooded but will also create an enabling environment for lending institutions such as rural banks and agricultural development banks to lend to smallholders due to the additional security that a warehousing receipt system can provide. Chang (2009) agrees with this view with the postulation that markets, left to their own devices, would not be able to provide such infrastructure. I contend, however, that the construction of such warehouses does not necessarily have to be the sole responsibility of the state and that if smallholders can organize themselves into cooperatives, they can as well easily construct such facilities. Besides, such cooperatives could perform key functions in limiting the exploitation of smallholder maize farmers as they would be more effective in influencing prices as group rather than as individual smallholder maize farmers. IFAD (2009) agrees with this view when it argues that when such farmers have access to reliable storage facilities for their grains, they then have the option of selling at the best price.

Another interesting aspect of the findings was the fact that, generally, smallholders are unwilling to abandon farming altogether even when it is clear to them that incomes from their farming ventures cannot adequately support their livelihoods. They would rather sell off their poultry and goats (Hesselberg 1993) as well as cut down consumption to the bone rather than abandon the land (Wood 2009). Such choices only end up entrenching them further in the shackles of poverty.

The findings of the study have relevance for other maize farming communities in Ghana as well as those in other developing countries. There is the need, however, to be conscious of the type of value chain that the smallholder maize farmers engage in in these other communities. Where a buyer-driven value chain predominates, one can expect to find smallholders effectively being price takers and having little or no negotiating power in the sale and purchase of their maize grains. Again, since instability in the producer prices is characteristic of agricultural markets, particularly those in

developing countries, smallholders in such regions would be expected to be squeezed from both ends as well. Poverty reduction efforts for smallholders should, therefore, target their empowerment to earn sustainable incomes rather than giving handouts since the latter is tantamount to treating the symptoms of an ailment instead of dealing with the root cause of the problem.

It is, however, possible that adaptation strategies among smallholders may differ from one maize farming community to another, depending on the level of resources and options available to them. For example, while those at Worawora prefer to rely on other off-farm sources of income such as shop keeping, remittances, carpentry, and lumbering while cultivating maize on a reduced scale, at least for household consumption at the same time, those in other maize farming communities in Ghana and elsewhere might engage in more or less off-farm income generating activities. Such other communities may depend more on, say, remittances, if there are better-off relatives elsewhere who can afford to send home money on a regular basis or more shop keeping if the population is more diversified with high levels of consumption. Making theoretical generalisations of the findings to other maize farming communities in Ghana and other developing countries will, therefore, require one to, first, consider the livelihoods options other than maize farming that are available in these other communities as well as their demographic and socio-economic characteristics.

7.5 Further Research

The preponderance of smallholder maize farmers in developing countries, coupled with the depth of poverty that is usually found among food crop farmers in the face of poverty reduction efforts means that there is the need for further research on smallholder maize farmers, especially, with regards to their efforts to improve the prices that they get for their farm produce. Of particular interest should be the creation and management of value chains that are producer-driven such as cooperatives and how these can help improve smallholder maize farmer incomes and alleviate poverty among them. Also, the effects of the dwindling producer prices and the apparent deagrarianisation and its effects on food security could be further explored.

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Appendices

Appendix 1: List and description of smallholder farmers interviewed for the study.

No.	Informant	Suburb of Worawora	Key Characteristics
1.	Kwabena	Kotomaase	Male, 33, Single, Akan tribe, JHS graduate cultivates on family land, been a maize farmer for about 12 years, cultivates 2-3 hectares a season, part-time local lottery agent.
2.	Kwadjo	Kotomaase	Male, 42, Akan, Married, 4 children with a set of twins, JHS graduate, cultivates on own land for over 15 years, part-time carpentry
3.	Wofa Kissi	Oman Mu	Male, mid-50s, Akan, 2 wives, children grown up, SHS graduate, cultivates on own land for over 35 years, 2 hectares, paid employment as a labourer at the hospital.
4.	Gedg	Osoro Asuom	Male, 36, Ewe, Single, JHS graduate, cultivates on leased land, 4-5 hectares, maize farmer for 12 years but took a 2-years break to be a mechanic's apprentice, operates a chain-saw machine.
5.	Kwadjo	Zongo	Male, 30, Married, Kabre, SHS graduate, Cultivates on other people's land, used to cultivate 4-5 hectares now cultivates more rice and less maize 1-2 hectares. Records keeper at the local hospital.
6.	Margie	Osoro Asuom	Female, 48, Akan, Married, children migrated to Accra, cultivates on husband's family land, 2 hectares, owns a provision shop, husband clears plot for her maize farm while he engages in cash crop (mangoes, pineapples and oranges) cultivation.

7.	Kwaku	Gyamera Krom	Male, 36, Kabre, Married, SHS graduate, cultivates on leased land, 2-3 hectares, been cultivating for the past 12 years, part-time taxi driver.
8.	Farmers' Chief	Kotomaase	Male, 52, Married, Akan, cultivates on own land, 2-3 hectares, been a maize farmer for more than 30 years, leases land to other farmers, plays a leading role in setting maize prices at the start of the season.
9.	Yaw	Tadee Krotia	Male, 46, Remarried, Akan, JHS graduate, cultivates on own land, 4-5 hectares, clears plot (1 hectare) for ex-wife, owns a provision shop with current wife.
10.	Wofa F	Gyamera Krom	Male, 38, Single, Akan, cultivates on own family's land 2-3 hectares, cultivating maize for the past 12 years, operates his drinking bar in the evenings.
11.	Yaw S	Worasec	Male, 40, married (2 children), Akan, cultivates on own land, been cultivating maize for about 15 years, prefers to harvest the corn when it is still fresh
12.	Auntie A	Tadee Krotia	Female, late 50s, Remarried, Akan, cultivates on husband's family land, been a maize farmer for over 40 years, uses a large proportion of the yield from her farm to prepare Koko for sale, grown-up sons clear the plot for her.

Appendix 2: Composition of Second Discussion Group.

No.	Participant	Occupation	Description
1.	Kwabena	Maize Farmer	Male, 33, Single, Akan tribe, JHS graduate cultivates on family land, been a maize farmer for about 12 years, cultivates 2-3 hectares a season, part-time local lottery agent
2.	Yaw	Maize Farmer	Male, 46, Remarried, Akan, JHS graduate, cultivates on own land, 4-5 hectares, clears plot (1 hectare) for ex-wife, owns a provision shop with current wife.
3.	Daavi	Maize Trader	Female, early 40s, Married, Ewe, buys maize grains from farmers and sells to other towns and sometimes exports to Togo.
4.	Sister S	Maize Trader	Female, 48, Akan, Married (2 children), stocks maize and resells when prices go up, sells corn dough as well.
5.	Kofi A	Farm Implements Shop Owner	Male, 38, Akan, Married, owns a shop that sells fertilizers, cutlasses, hoes and other minor farming implements for smallholders.
6.	Opanyin A	Farmers' Chief	Male, 52, Married, Akan, cultivates on own land, 2-3 hectares, been a maize farmer for more than 30 years, leases land to other farmers, plays a leading role in setting maize prices at the start of the season.

Appendix 3: Interview Guide for Smallholder Maize Farmers

Introductory Exchange

- Exchange of traditional greetings
- Introduce myself and research assistant and explain the purpose of my study
- Explain the importance of the insight of the informant to the study
- Explain the rights of the informants and my obligations towards them

- Seek informants' consent to use voice recorder

Personal Background Information on farmer-informants:

- Age, Gender
- Ethnicity, Educational level, Marital status
- How long have you been engaged in maize farming?
- Do you cultivate maize on your own plot of land, someone else's or both?
- If on someone else's plot of land, what are the terms of agreement?
- How large is your maize farm? Has it been increasing, decreasing or remained fairly the same over the last five years?
- Approximately how many bags of maize do you produce during the major season, minor season?
- What quantity of your produce do you keep for household consumption?

Trends in the prices of Maize

- How does the local producer price of maize compare to the prices of consumer goods that farming households usually need?
 - How much does a bowl (*Olonka*) of maize sell for now?
 - Whom do you sell your maize grains to, where and when?
 - How much was it selling for, a month ago? Three months ago? Six month ago?(Is the price rising or falling
 - Has the trend been the same over the past five years?
 - If different, what factors do you think account for the variations on yearly basis?
 - What factors determine the price of a bowl of maize after harvest? (terms of lease of land, fertilizer prices, prices of other consumer commodities etc)
 - Do you engage in some form of negotiation with market women on the price of maize?
 - How do you compare your income* from your maize farm now to, say, a year ago, two years ago, or five years ago?

- If how much you make from your maize farm has increased or decreased, what do you think accounts for the changes?
- If decreased, are you able to buy the same quantity of consumer goods mentioned earlier?

NB: I hope to be able to draw a graph with the price range on the vertical and months from harvest time to new season (Sept-August the following year) on the horizontal graph. It is expected that this would give a sense of the trend in the prices of maize from the time of harvest to the new planting season (September to August) I will then do the same plotting for previous five seasons from 2007/2008 through to 2011/2012.

- Please mention five most essential consumer goods that you spend your income on? (Example: kerosene, soap, clothes, sugar, salt etc.)
- How much do these goods cost now?
- How much were they two, three, and six months ago? A year ago?
- Were they of the same prices this time last year? And a year before that?
- Are the prices of these goods likely to remain the same or increase in future?

Implications for Real Incomes and Standard of Living of Farmers

- What do you do to compensate for falling incomes due to reduction in maize prices? (Engage in non-agricultural income-generating activities, farm labour on other farmers' plots, increase farm size, apply fertilizer etc.)
- How do you seek to grow your farm incomes? (Increase farm sizes, sell surplus grains only during lean season, etc.)
- What do you think of suggestions about increasing farm sizes?
- Do you try to improve your maize yield through fertilizer application?
- Do you sell your maize grains as soon as possible (immediately after harvest) or you are able to wait until prices go up?
- If they sell immediately after harvest, what prevents you from waiting until the lean season so you can get higher prices for your grains?

- How often do you buy maize grains later in the season after you have sold all your harvest at comparatively lower prices immediately after harvest?
- Who do you sell your maize grains to? Middlemen at the farm gates, market women or processing companies? Why this choice?
- What proportion of your income comes from maize sales?
- Has this proportion been increasing, decreasing or is the same over the last five years?
- How is this affecting your income flow and your ability to purchase consumer goods your household needs?
- How do you cope under these circumstances?
- Do you have any additional/alternative sources of income or are you engaged in any other kind of income generating activity?
- What are some of the non-farm income generating activities that you engage in? (Ruminant rearing, poultry rearing, petty trading etc)
- What proportion of your current income comes from sources other than maize farming?
- What is your opinion on maize farmers' formation of cooperatives to market grains in order to boost prices?
- What challenges are you confronted with in a bid to boost your incomes from your maize farm?

Closing Remarks

- Have I dealt with all the important issues?
- Are there any issues that you want to talk about?
- Indicate how important their insights have been to my study and express gratitude for their time.

Appendix 4: Supermarket and Shop Owners in the Study Area

- How long has your shop been in operation?

- What categories of people usually patronize your shop?
- Do maize farmers buy goods from your shop?
- How do they pay for the goods they buy from you?(On cash or credit basis)
- Has their purchasing history changed in the last one year? Are they buying more or less?
- What are the prices of the following consumer goods? (Mention those goods mentioned by maize farmers earlier).
- What were the prices of these same goods a month ago, two months ago, three months ago, or six months ago? Are the prices increasing, decreasing, or remain the same?
- Was it the same price this time last year? And a year before that?
- How often do you change the prices of your goods?
- What factors influence the prices of goods in your shop?

NB: I will then attempt to draw a graph with insights into the price trends of the consumer goods akin to that of maize prices.

Closing Remarks

- Have I dealt with all the important issues?
- Are there any issues that you want to talk about?
- Indicate how important their insights have been to my study and express gratitude for their time.

Appendix 5: Middlemen, Market Women and Trading Companies

- How much does a bowl (*Olonka*) of maize cost now?
- How much was it a month ago, two months ago, three months ago, six months ago?
- Was it the same price this time last year? And a year before that?
- What goes into the pricing of maize grains at the beginning of a harvest season?
- To what extent do maize farmers influence prices of grains? How?

Closing Remarks

- Have I dealt with all the important issues?
- Are there any issues that you want to talk about?
- Indicate how important their insights have been to my study and express gratitude for their time.

- ❖ At the conclusion of all interviews and field observations, I hope to be able to convene some form of group meeting of some of the maize farmers, middlemen and market women at

which issues they deem pertinent in relation to my study of trends in maize prices and implications for smallholder farmers' incomes will be discussed. Though it is not really a focus group discussion, I intend to have a local Assemblyman/woman present and will ask the various stakeholders present to share their views on the way forward for them. Hopefully, this will yield further insights into the topic.

Appendix 6: Field Observation Guide

Observe maize farmers in their homes during interviews to gain insights into their economic situations in terms of what kinds of 'luxuries' they could afford and those that they could not. This kind of observation will be done in connection with other variables such as whether those who appear to be relatively well-off are those who sell their grains during the lean season, cultivate on own land, been farming for quite a long time, among others.