

# Price Fluctuation of Agricultural Products and its Impact on Small Scale Farmers Development: Case Analysis from Kilimanjaro Tanzania

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## Abstract

Price fluctuation is a multifaceted problem attributed by various factors which, when combined, culminate in dangerous consequences for the most vulnerable. Although high prices can technically be good news for farmers, price fluctuation is extremely dangerous, as farmers and other agents in the food chain risk losing their investments if prices fall. One frequently cited reason for increased prices is 'market fundamentals' as demand is thought to be outstripping supply and thus leading to increased prices. The specific focus was to identify the causes of price fluctuation for agricultural products, examine the contribution of good price toward achievement of small scale farmer's development and to find out the possible solutions on how price fluctuation can be addressed. Cross sectional research design was used to undertake the study where Hai District council was selected as a study area located in Moshi Rural. Purposive and simple random sampling techniques were used to pick a sample of 30 respondents including farmers from Kalali village, Mkufi village and Sanya Juu. Multiple approaches including questionnaire, interview, and documentary review were used to collect data. Data were analyzed through applying interpretive and reflexive qualitative approaches while quantitative techniques involved utilization of descriptive statistics. Findings showed that price fluctuation of agricultural product is a challenge towards achievement of small scale farmer's development which results to loss of capital and farmers shifting to other production activities.

**Key Words:** Price Fluctuation, Agricultural Product and Small Scale Farmers.

## 1. Introduction

Price fluctuation is a multifaceted problem attributed to various factors which, when combined, culminate in dangerous consequences for the most vulnerable. Although high prices can technically be good news for farmers, price fluctuation is extremely dangerous, as farmers and other agents in the food chain risk losing their investments if prices fall. One frequently cited reason for increased prices is 'market fundamentals'. Demand is thought to be outstripping supply and thus leading to increased prices. Climate change, depleted soils and aquifers and the loss of biodiversity are often noted as contributing factors. Yet food production has never been as high as it is today and commodities markets are becoming increasingly interesting for financial speculators (German 2005).

Price fluctuation is not only harmful to consumers but also affects producers. Generally, poor farmers do not have enough investment capital to sustain such unpredictability. This can result in suboptimal investment decisions and compromise production in the long term. Higher food prices have not necessarily translated into better prices for farmers in developing countries because non-food Essentials such as cooking fuel, transport, rent, fertilizers, kerosene and agricultural inputs have also become more expensive. Also, intermediaries are facing higher transportation costs which they are in turn passing on to farmers (Baffes, 2011). A study by Oxfam and IDS13 suggests that farmers in developing countries are producing fewer surpluses because of increased input prices. 'High input costs have squeezed people's purchasing power, which means that profits from growing and selling food remain low for those with least scope to diversify and spread risk'.

Due to the observed effect of price fluctuation and its impact to small scale farmer's development, this brings the need to focus on how farmers can improve their agricultural investment in order to sustain farmer's development by use storage facilities like silos and this can be done during lowest price for produce during harvest. Therefore, holding off the sale from harvest to a more opportune time will more than pay for the storage.

## 2. Research Objectives

In order to study and understand the problem, the study had the objectives of identifying the causes of price fluctuation for agricultural products; examine the contribution good price towards achievement of small scale farmers development, and to find out the solution on how price fluctuation can be addressed.

### **3. Literature Underpinnings**

#### **3.1 Price Fluctuation Concept**

Price fluctuation is a frequent rise and fall of commodity prices in the market as a result of changes in the market situations, price fluctuation can be seasonal whereby prices of commodities change during certain seasons of the year due to the increase in supply and demand. Price fluctuation in the market can take a short term due to a slight change in demand or supply of commodities in the market. But it can also last long due to the increased inflation rate which highly affects the prices of commodities in the market and its effect lasts long and limits the ability of customers to purchase commodities in the market (Mchopa, 2012).

#### **3.2 Causes of Price Fluctuation of Agricultural Product**

Agricultural product prices have been fluctuating widely over the last few years, hurting both consumers and producers (Ghanamen, 2011). United Nations Food and Agriculture Organization (FAO) shows the price index of food has fluctuated widely over four years. The index shows that prices rose from 122 in 2006 to 214 in June 2008. This was caused by the following factors: changing petroleum prices which result in high inflation of food prices like transportation cost, crop yield, food stock levels as stock falls prices rise, change in exchange rate especially of major exporting countries, trade policies, drought, low technology, demand for food is inelastic as small changes in supply can cause big changes in prices, the role of speculation and seasonal production. Also according to Global Market Report (2007) the agricultural commodity markets have experienced extreme price fluctuations more and more frequently, the main reasons for these changes are supply and demand factors which include population growth, weather conditions that affect the output related to price.

#### **3.3 Contribution of good price toward achievement of Small Scale Farmer's Development**

Hans (1999) argued that price contributes much toward achievement of small scale farmers' development but this is measured by considering price if it covers the cost of production. For example when the price of agricultural product is good or high compared to the cost of production results in high profit to the producer of agricultural product. Farmers maximize their profit; this is due to Return on Investment (ROI) which is higher than the cost of production, increase per capita income of farmers hence reduce poverty, increase production (output) due to capital accumulation, maximize market share, increase cash flow of the producer, effective planning and decision making on production and reduce the risk of losses.

#### **3.4 Possible solution toward price fluctuation of agricultural product**

Ghanamen, (2011) suggest various methods which can be adopted by the government and other stakeholders in order to reduce price fluctuations of agricultural products, effective market management and control for example by maintaining buffer stocks, high investment in agriculture sectors particularly in research, development and infrastructure that promote irrigation, improvement of trade policies particularly agricultural subsidies, improving market transparency the FAO should intensify its information gathering and disseminating information, financing instruments where by existing financial instruments such as the IMF must be made more flexible and usefully for developing countries during crises, commodity exchanges the regulatory framework governing must also be reviewed to reduce speculative behavior and thus limit volatility.

### **4. Methodology**

A cross-sectional research design was used to undertake the study where the villages of Kalali, Mkufi and Sanya Juu in Hai District were selected as a study area. The design involved intensive analysis of the phenomenon in the selected villages within a specified time. Hai District Council is bordered to the south and west by Arusha region, to the west by Siha District, to the north by Kenya and to the east by the Moshi Rural District and Rombo District. The area covers approximately a total of (13,209 km squares). According to census of 2012 the population of Hai District was 210,533. Hai is located at latitude -3.147°c and longitude 37.1687°.

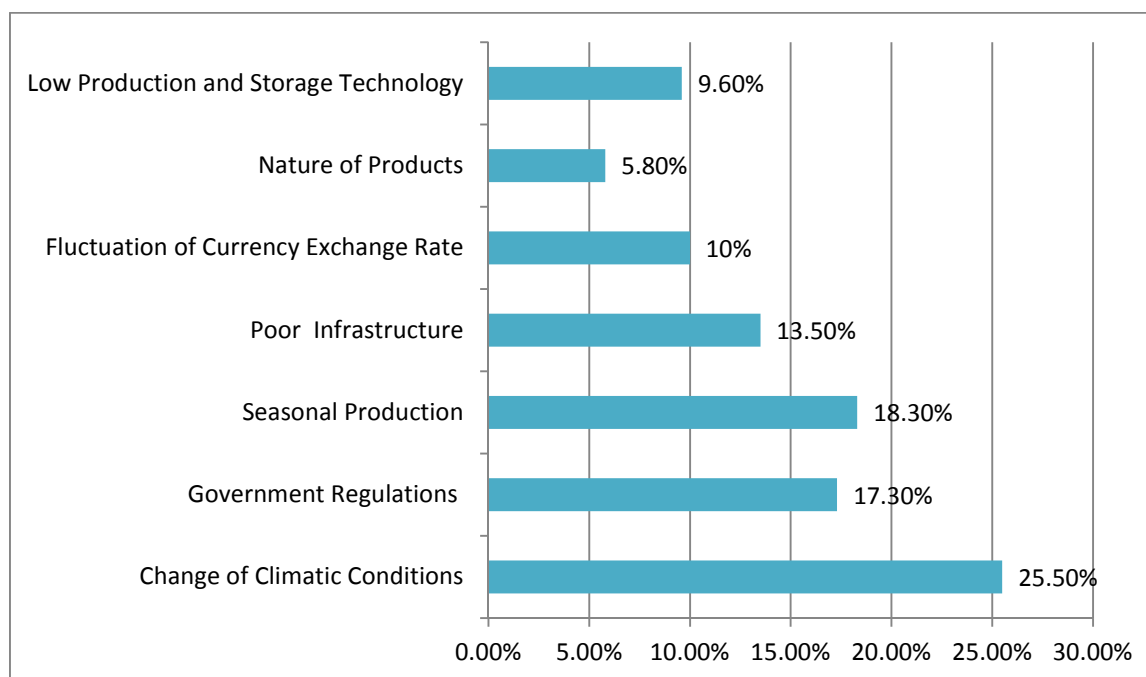
Purposive and simple random sampling techniques were used to pick a sample of 30 respondents including farmers from selected villages. Multiple approaches including questionnaire, interviews and documentary review were used to gather both primary and secondary data which enabled the researcher to do cross-data validity checks. Data were analysed through applying qualitative techniques that involved the use of interpretive and reflexive approaches while quantitative techniques involved utilisation of descriptive statistics.

## 5. Results and Discussion

### 5.1 Causes of price fluctuation of Agricultural Products

Since 2007, the agricultural commodity markets have experienced extreme price fluctuations more and more frequently this often causes severe supply problems, especially in the least developed countries. Based on that, the study wanted to determine the various causes of price fluctuation of agricultural products. The results are shown in Figure 1 below.

**Figure 1: Causes of Price Fluctuation**



The reason of change of climatic condition was mentioned by (25.5%) respondents where it was pointed that change in climatic condition contribute much on determining the level of harvest to farmers this is because agricultural supply is mostly based on rain and highly dependent on the weather, therefore for the farmers the annual weather differences is more important than eventual climate change. Also it was established by (17.3%) that Government regulation and policies does not provide a conducive environment to farmers, this is because when government provides subsidies to farmers it also allows importation and exportation of product, import tax on the product affect the price charges from the agricultural products to be low or high. This revealed that the importation and exportation of agricultural product also it affect the price sustainability of domestic price of agricultural product.

Some respondents (18.3%) pointed out that Seasonal productions is also another causative factor, most agricultural products are seasonally produced which cause an equal balance of the availability of it and for this reason price tend to be low during bumper time and to be high during scarcity time hence to make rise and fall of price in different periods. Furthermore, (13.5%) commented that poor infrastructures is one among the causes of price fluctuations, there is high difference in level of appropriateness of roads in this country which make the ever changing of prices for agricultural products from time to time around the year especially during the rain seasonal most supply areas are not reached easily which causes price to raise.

Fluctuation of currency exchange rates took (10%), rise and fall of the currency causes the price of agricultural products to fluctuate, it was argued that the unstable fuel prices causes everything else including farm products to fluctuate more often due to high cost of transporting the farm product from the farm area to the markets. Nature of products was also pointed out by (5.8%) as another cause of price fluctuations, it was established that most agricultural products tend to be perishable in nature as to why it influence the rise and fall of price over time, the perishability nature of some agricultural product makes it difficult to store during plenty time hence farmers has to sell them even when the price is still low. Low production and storage technology took (9.6%) it was argued that, technological development among small scale farmers is still poor and this affect production of

agricultural products in terms of high cost of production and long incubation period, when poor technology is used in production, price tend to raise compare to high technologies which reduce total cost of production,

### 5.2 Contribution of good price to the development of small scale farmers

The price of goods plays a crucial role in determining an efficient distribution of resources in a market system. Price acts as a signal for shortages and surpluses which help farmers respond to changing market conditions, the study wanted to know what contribution does good price has to the development of small scale farmers. Results are shown in Table 1 below.

**Table 1: Contribution of Fair Price**

| Contribution                                 | Frequency (n=30) | Percentage |
|--|------------------|------------|
| Increase Personal Income                     | 10               | 33.30      |
| Motivate Farmers                             | 6                | 20.00      |
| Effective Utilisation of Resources           | 4                | 13.33      |
| Improve Farmers' Livelihood                  | 6                | 20.00      |
| Enhance the use of Better Farming Technology | 4                | 13.33      |

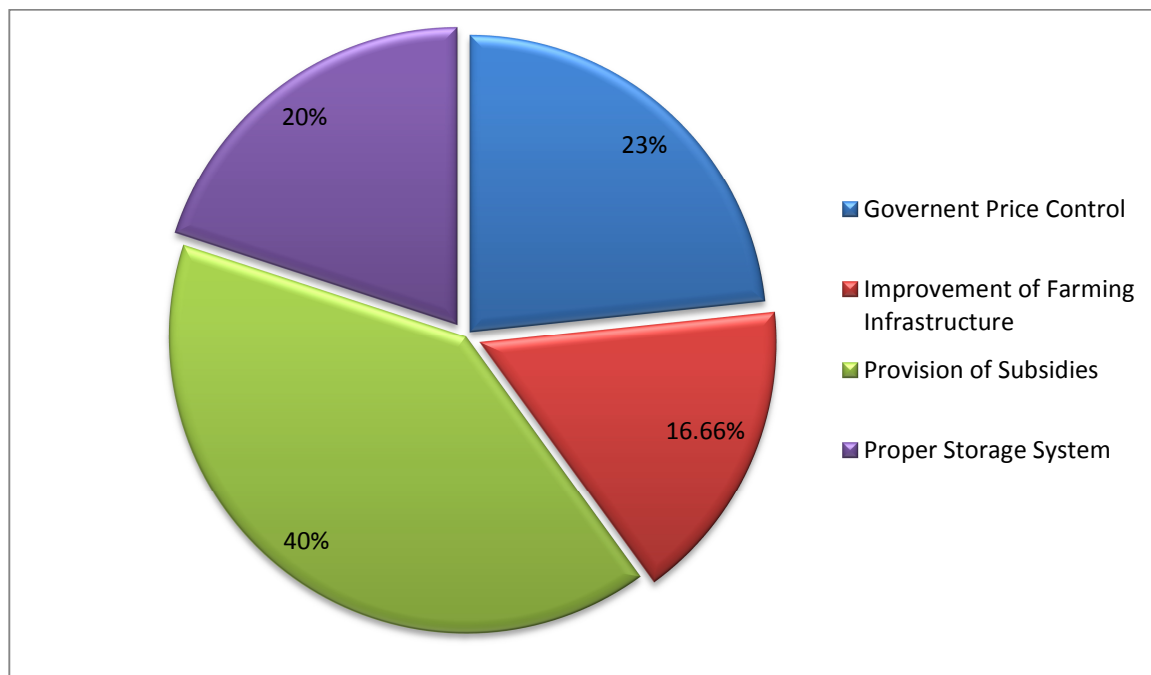
The study revealed that the price of agricultural product contributed much to the development of farmers. Based on (Table 1) above (33.3%) said good price Increase personal income, Per capital incomes of farmer rise in the extent that they afford to meet their basic needs which are: to purchase food, clothes and shelter also taking their children to school as well as acquiring better health services. It was also pointed out by (20%) that a good price motivates famers, they argued that when the price is fair to small scale famers it encourages them to produce more without despair. It was pointed out that price of vegetables product such as cabbage, and spinach in Mkufi estate is normally good and fair throughout the year and this has helped them to maintain their income and meet their basic needs.

Effective utilization of resources is another benefit pointed out by (13.33%) The famers use the profit gain from the agricultural production in production of crop that strives to achieve acceptable profits together with high and sustained production levels while concurrently conserving the environment. Furthermore, (20%) commented that good price improve famer's livelihood and reduce poverty they agreed that good price for agricultural product help farmers live the reasonable life. by building good houses, improvement of general infrastructures and physical health. Lastly (13.33%) commented that good price helps to improve the level of production and storage technology, where by profit gained from their agricultural product partly is used to buy modern equipment to be used in their farming activities as well as improved storage technology

### 5.3 Measures to prevent price fluctuation of agricultural products

There are various measures implemented to control price fluctuations in order to support the domestic price of farm products as shown in figure 2 below:

**Figure 2: Measures to prevent price fluctuation**



It was revealed by (23%) that, the government is the major solution to resolving the problem of price fluctuations of agricultural products through Pre-established import price below which imports cannot take place. by setting a minimum price to imports will discourage imports as a results domestic product will fetch better prices. It was further argued that, when the government restricts selling of agricultural products outside, Tanzania has resulted into larger accumulation of stocks while demand is low, this situation makes the price to go down. Improvement of farming infrastructures was identified by (16.66) respondents, small scale farmers use poor farming tools which requires more labor force as a results of high production costs.(40%)commented that, provision of subsidies is very important in stabilizing prices and gaining control over the market and the economy of the country at larger. Lastly proper storage system was mentioned by (20%), having proper storage system farmers will be able to preserve their surplus and hence balance price throughout the season.

## 6.0 Conclusions

Finding revealed that development of small scale farmers depend entire on the price stability of their farm produce, the study identified several causes which has been the reason of unstable price of agricultural products as change in climatic condition, government regulation, poor infrastructures, seasonal production, fluctuations of currency exchange rate, nature of product as well as low production and storage technology. Finding also revealed several contribution of good price to farmers such as increasing farmers income, motivating farmers, effective utilization of resources, improving farmers livelihood as well as enhancing the use of better farming technology, the study also identified several measures of preventing price fluctuation , government price control, improvement of farming infrastructures, provision of subsidies and proper storage system.

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