

# ANALYSIS OF THE EFFECT OF PRICE FLUCTUATION(S) ON THE RETAIL MARKETING OF TOMATO IN SELECTED MARKETS IN IBADAN SOUTH WEST LOCAL GOVERNMENT AREA OF OYO STATE

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## ABSTRACT

*This study analyzes the effect of price fluctuation(s) on the retail marketing of tomato in Ibadan South West Local Government Area of selected markets, Oja Oba (Kings Market) and Orita-merin market. Primary data were obtained from administration of a well-constructed questionnaire and Secondary data on tomato price spanning from 2009 – 2013 were obtained from Oyo State Agricultural Development Programme (OYSADEP) and used for the analysis. A total of 110 questionnaires were administered in the study area and 95 were used. The major causes of price fluctuations include, Climatic conditions, transportation cost, insecurities in the country, Government policies and hike in fuel prices. The analysis of variance revealed that there were variations in the price level across the years 2009-2013 marketing period of tomato during its on-season and off-season. This could be due to the fact that production is more during the on-season than off-season. The Tukey honestly significant difference test revealed that during the on-season of tomato, the year 2010 has the least mean price and it showed very wide variation in mean price from the other years. During the off-season of tomato, the years that showed variations in their mean prices were 2009 and 2011.*

**Keywords:** Price, Price Fluctuation, Marketing, Marketing Channel of Tomato, Agricultural Commodity, Tomato, Oyo State

## INTRODUCTION

Price in any transaction is an exchange of something of value, usually money for a bundle of satisfaction. Price fluctuation in the marketing of tomato refers to the changes in price of tomato over time. These prices can fluctuate from day to day depending on supply and demand for tomato. 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

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transportation costs which they are in turn passing on to farmers (Baffes, 2011; ; Israel, Sunday, Mansong and Ubong, 2016).

One of the definitions of marketing as given by Dixie center, (2014), is that marketing involves finding out what the customer wants and supplying it at a profit." The phrase "finding out what your customer wants" emphasizes the role of communications in agricultural marketing. It encompasses the immediate information required on the market's demand for specific volumes and quality of agricultural products and the longer-term information on market trends (referred to here as "market intelligence") required to make future plans for the farm.

Efficient food marketing system and its role in food security in Nigeria is pivotal to a reduction in post-harvest losses; ensuring adequate returns to farmer's investment and stimulating an expansion in food production thereby enhancing the level of food security in Nigeria through adequate information about prices of agricultural produce (Ladele *et. al*, 1997). Prices are a measure of availability because they tend to rise as the supply of food falls in relation to demand (e.g. poor production, constrained imports of food), and they tend to fall when supply expands in relation to demand (e.g. a bumper harvest). Agricultural prices contribute significantly to the pace and direction of agricultural development. They serve as market signals of the relative scarcity or abundance of a given product (Akintunde *et. al*, 2012). Prices also serve as a stimulus to direct the allocation of economic resources and to a large extent they decide the structure and rate of economic growth. Prices vary almost throughout the year and understanding the trend of such variations was therefore essential for good planning by the producers, consumers and policy makers. The price volatility of agricultural commodities in Nigeria is attributable to various factors including variances in bargaining power among consumers, cyclical income fluctuations among sellers and consumers, natural shocks and inappropriate response by farmers to price signals (Adebusuyi,

2004; Udoh *et. al* 2007). However, short-run fluctuations in agricultural commodity prices take place between production seasons. During the harvesting period, farmers offer to the market the minimum price for their products while prices become high during the drought or off-season owing to reduced production and seasonal changes (Cashin and Pattillo, 2000). A major characteristic of agricultural markets in Oyo State is the inter- and intra-pricing variations among its urban and rural retail markets due to the forces of demand and supply (Adenegan and Adeoye, 2011).

According to Abbott (2009), agricultural commodities price have experienced unprecedented fluctuations and continuous increases since 2002 until mid-2008. He argued that this has brought about price volatility, food inflation, poverty and hunger, coupled with inadequate market price transmission. High food prices increased the levels of food deprivation, food insecurity, worsening conditions for many who were already food insecure and thus threatening global long-term food security. This has placed a tremendous pressure on achieving the millennium development goal (MDG) on hunger by the year 2015 (FAO, 2008). Nigeria is ranked as the second highest producer of tomatoes in Africa and the 13th in the world (FAO, 2011) but is not on the list of officially exporting countries and even still imports (both fresh and processed). It has been reported that the world tomato production in 2001 was about 105million tons of fresh fruit from an estimated 3.9 million hectares (Naika *et.al*. 2005; FAO, 2005). In Nigeria, tomato accounts for about 18% of average daily consumption of vegetables (Babalola *et.al*. 2010). This makes it a very important food crop to an average Nigerian. Tomato has its origin in the South American Andes (Naika *et. al*. 2005). The tomato plant is very versatile and it could be grown for either fresh market tomatoes or processed using mechanical processes. Tomato is one of the most cultivated vegetables in most regions of the world, ranking second in

importance to potatoes in many countries (Ojo *et al.*, 2009).

Most nutritionists are of the opinion that fresh fruits and vegetables are very important sources of vitamins and minerals that are essential for healthy human diet (Chidi, 2012). Tomato has a lot of nutritional benefits. Some tomato varieties have been found not to be acid forming and they contain double the normal amount of vitamin C that is, they are double rich. Some tomato varieties are so rich in vitamins that they contain forty times the normal amount of vitamin A (Healthcareclinic.org, 2014). Nutritionally, tomato berry is classified as a vegetable and consumed as such. Some varieties have very high levels of anthocyanin which is medicinal. Anthocyanin pigments can also be used for medicine. Tomato berry contains lycopene which is a carotenoid and an antioxidant with a bright red colour which are helpful for protecting vision and combating cellular damage (Tomatoweb.com, 2014). Cultivation on a large area can generate employment both at the urban and rural levels. Tomato is cultivated almost throughout Nigeria and the most important areas of cultivation lie between 7.5°N and 13°N mostly Ogbomoso and Ibadan in Oyo state in the South-western parts of the country in small holdings under rain fed conditions. In the Northern parts of the country such as Zaria, Kaduna, Jos, Gombe, Ilorin in Kwara state, Sokoto, Maiduguri, under irrigation systems (Ayandiji *et al.* 2011).

Vegetable marketing is often characterized mainly by the problem of seasonality and perishability. The quality and nutritional value of fresh vegetables like tomato, fresh pepper, sweet pepper, chili pepper and onion are affected by post-harvest handling and storage conditions (Sablani *et al.*, 2006). Efficient harvesting, handling, transportation and marketing techniques are extremely important in tomato production because it is a seasonal crop and highly perishable in nature. At the market place, the seller is faced with problems of spoilage as the tomato has to be sold within the shortest time possible before they get spoilt. Determinants of

price fluctuation in the marketing of tomato include fluctuation in production, seasonal supply preference of farmers and middlemen for urban markets than processors due to low farm gate prices, socio-economic characteristics of marketers along the marketing chains. They are influential in the continuous availability because of perishable nature.

The current study is focused on the analysis of the effect of price fluctuation on the marketing of tomato in Oyo state, Nigeria. The specific objectives of the study are to determine the socio-economic characteristics of the respondents in the study area, determine the perception of tomato retailers on the possible causes of price fluctuation on the marketing of tomato, identify the variations in profit made by tomato retailers during the on-season and off-season of tomato, identify the variations in the price level over the 5 years (2009-2013) marketing period of tomato during its on-season and off-season in urban markets in Oyo state.

### Hypotheses of the Study

**Hypothesis 1:** Statement of hypothesis for prices of tomato during its on-season in the urban market.

**Hypothesis 2:** Statement of hypothesis for prices of tomato during its off-season in the urban market:

**(H<sub>0</sub>)<sub>1</sub>:** there is no variation in the price level over the years (2009-2013) marketing period of tomato during its on-season in urban market.

**(H<sub>A</sub>)<sub>1</sub>:** there is a variation in the price level over the years (2009-2013) marketing period of tomato during its on-season in urban market.

**(H<sub>0</sub>)<sub>2</sub>:** there is no variation in the price level over the years (2009-2013) marketing period of tomato during its off-season in urban market

**(H<sub>A</sub>)<sub>2</sub>:** there is a variation in the price level over the years (2009-2013) marketing period of tomato during its off-season in urban market.

## METHODOLOGY

The study was carried out in Ibadan South West Local Government. It was created 1991, with its Headquarters at Ibadan. The city of Ibadan is located on the South western part of Nigeria, lying between latitude 7°N and 23°N of the equator and longitude 3°E and 5°E Greenwich meridian. It has an average rainfall of between 1250mm and 1800mm. The temperature range is 27°C and 32°C with relative humidity of about 75% to 90%. (<http://www.oyostatenigeria.government.net>, accessed on 5th February, 2014). It covers a landmass of 133,500 square kilometers with a population density of 2,401 persons per square-kilometer. (<http://www.oyostatenigeria.government.net>, accessed on 5th February, 2014). The 2010 estimated population for the area was projected 320,536 people, using an annual growth rate of 3.2% from 2006 census.

There are no serious farming activities in the area being an urban centre. The main occupation of the people include; Trading, Teaching, Artisan and Banking.

A multi-stage sampling technique was used in selecting the respondents. The first stage was a purposive sampling of two tomato retail markets in Ibadan South West. The selection was based on the high level of tomato marketing activities in the area. The selected markets were Oja oba (Kings Market) and Orita-merin market. The second stage was the use of systematic sampling method in the selection of tomato marketers from each of the selected markets. Primary data were obtained using well-structured questionnaires and personal interviews with the respondents. A total of 110 questionnaires were administered in the study area and 95 were successfully filled and used for this study. Secondary time series price data covering the period 2009 – 2013 were obtained from Oyo State Agricultural Development Programme (OYSADEP) which contains the monthly retail prices of fresh tomato

per kilogram in naira in urban markets in Oyo state. The urban markets in Ibadan zone include, Bodija, Oje, Oja Oba (kings market), Oritamerin, Olomi and Olorunsogo. Data was analysed using descriptive statistics such as frequencies and percentages, Analysis parametric paired sampled t-test, Analysis of variance and Budgetary analysis.

Analytical Budgetary analysis was used to determine the profit;

$$GM = TR - TVC \quad - \quad - \quad - \quad 1$$

Where:

GM is the Gross margin

TR is the total revenue;

TVC is the total Variable cost

Total Revenue (TR) = Price × Quantity  
Of product sold.

Total Cost (TC) = Total variable cost

(TVC) + Total fixed cost (TFC)

Profit (Net return) = Gross Margin – Total fixed  
Cost

Net profit = Total revenue – Total cost

Variable cost includes, tomato purchase cost + transportation cost + cost of empty baskets + labour cost + market association.

Total fixed cost includes land rent.

## RESULTS AND DISCUSSION

### Socioeconomic characteristics of respondents

The summary of the results of the socioeconomic characteristics of the respondents is presented in Table 1, 88% of the respondents are female while 12% are males. This shows that more women are into tomato retailing than men in the study area. This may be as a result of the fact that tomato marketing in the study area was done on a small scale. Tomato retailing is not as

stressful as other forms of marketing and requires less capital to start the business which can be sourced for from personal savings, money lenders, cooperatives and family fund. It may also be as a result of the fact that the marketing margins on tomato retailing come in tricks and women being traditionally the home markers in African context use such money coming in tricks to meet immediate family financial needs timely.

Majority of respondents are between 34 - 41 years, with 87.4% of the respondents above 34 years. 12.6% of the respondents' age falls within the age range of 23 and 33 years. It implies that young women are more into the trade because they are energetic and capable of working well on the marketing activities. The mean age of the respondents is  $42.3 \pm 8.17$  years. About 75.8% of the respondents are formally educated, only 24.2% of the respondents have no formal education. Those who had non-formal education were however able to understand in the way or the other Pidgin English (literate). This literacy level of the respondents is of remarkable importance on the retailers marketing decision making process. In the marketing of tomato, education seems not to be a barrier since both educated and illiterates do market tomato successfully and profitably.

About 76.8% of the respondents are married and only 5.3% are widow/widowed while 17.9% are divorced. It is assumed that retail marketing of tomato is a serious business that requires stability of the home for success. Migrant retailers may find it difficult to excel in the business since it needs close attention.

It is evident that majority of the respondents were selling tomato on full-time basis as revealed by the table. 24.2% of the respondents are selling tomato on part-time basis. Those on the part time bases have other businesses such as hair dressing, palm oil trading, fish selling and tailoring. The 75.8% of the respondents that sold tomatoes on a full-time basis laid claim to the fact that they were satisfied

and contented with the income they got from the trade.

The result of the analysis showed that respondents with years of marketing experience ranging from 1-5 years in tomato retailing were the highest, constituting 66.3% of the respondents. This may be as a result of the fact that different people enter the market to start tomato retailing, since there is no barrier of entry into the market.

Majority of the respondents are Muslims 65.3% and 34.7% of them are Christians. This suggests that there is no bias of religion on tomato marketing.

### **Perception of causes of Price Fluctuation in the Marketing of Tomato**

Table 2 reveals that based on the perceptions of respondents, price fluctuations are caused mainly by climatic condition such as rainfall which affects the seasonality of tomato availability in the markets there by resulting in seasonal price. This is due to the fact that tomato is usually produced in excess during the peak of dry season, thereby causing reduction in its farm gate price. Tomato attracts higher prices during the rainy season. It may be due to the fact that tomato production is low during the rainy season as farmers divert resources to other crops to mitigate their loss.

The respondents agreed to the factor that government policy causes tomato price to fluctuate. According to Nigerian's Transformation Agenda, 2012, it was stated that local growers and processors agreed that government policies as regards the importation of canned tomatoes are not favourable to the growth and development of tomato. It could be suggested that as processors are not favoured with government policies, prices of tomatoes produced may increase. This may be due to the purchase of inputs and other factors that is not provided by the government which the farmers use during the production process

**Table 1: Distribution of respondents according to socio-economic characteristics**

<b>Variable</b>	<b>Frequency</b>	<b>Cumulative Frequency</b>	<b>Percentage%</b>
<b>Sex</b>			
Male	11	11	11.6
Female	84	95	88.4
<b>Total</b>	<b>95</b>		<b>100</b>
<b>Age (Years)</b>			
26-33	12	12	12.6
34-41	51	63	53.7
Above 42	32	95	33.7
<b>Total</b>	<b>95</b>		<b>100</b>
<b>Education Level</b>			
Non formal education	23	23	24.2
Primary education	38	61	40
Secondary education	30	91	31.6
Tertiary education	4	95	4.2
<b>Total</b>	<b>95</b>		<b>100</b>
<b>Marital status</b>			
Married	73	73	76.8
Divorced	17	90	17.9
Widow/Widower	5	95	5.3
<b>Total</b>	<b>95</b>		<b>100</b>
<b>Nature of business</b>			
Full time	72	72	75.8
Part time	23	95	24.2
<b>Total</b>	<b>95</b>		<b>100</b>
<b>Marketing Experience (Years)</b>			
1-5	63	63	66.3
6-10	31	94	32.6
11-15	-	94	-
16above	1	95	1.1
<b>Total</b>	<b>95</b>		<b>100</b>
<b>Religion</b>			
Christianity	33	33	34.7
Islam	62	95	65.3
<b>Total</b>	<b>95</b>		<b>100</b>

Source: Field survey, 2015

It also revealed that the respondents were indifferent to the questions on festive period such as Christmas, Easter and Sallah causing price fluctuation since most often they do not fall into the same period and therefore their joint effects

is difficult to perceive by respondents. It could be due to the fact that Easter, Sallah and other festive period changes yearly. Periods when Easter and Sallah period coincide with the lean period of tomato, prices may rise. Since Christmas occurs during the dry season which

marks the peak period of tomato, prices remains the same.

**Table2: Respondents Perception on causes of Price Fluctuation in the Marketing of Tomato**

Conditions for Price Fluctuation	Mean	Ranking
Climate conditions e.g. rainfall	4.2	1
Insecurity in the country	3.9	2
Hike in fuel price in the country	3.9	2
Government policies such as removal of subsidy	3.6	3
Ramadan fasting festive of Muslims and fasting period of Christians	3.5	4
Transportation cost	3.2	5
Christmas and Easter fasting periods	3.1	6

Source: Field survey, 2015

The result of the analysis shows that total fixed cost of tomato retailers which is the rent on space per month for the on-season and off-season, was estimated as ₦ 965.26. Total Variable which includes the average price of transportation, labour commission fees for 565kg of tomato, cost of tomato raffia baskets for 565kg of tomato, market association, farm gate purchase of 565kg of tomato were estimated to be ₦ 119.68, ₦ 1,684.27, ₦ 174.81, ₦ 51.58 and ₦ 67,657.28 respectively during the on-season. The total variable cost during the on-season amounted to ₦ 58,821.77 per month and the total cost amounted to ₦ 59,787.03. Total variable cost during the off-season of tomato includes the average price of

transportation; labour commission fees for 452kg of tomato, cost of tomato raffia baskets for 452kg of tomato, market association, and farm gate purchase of 452kg of tomato were estimated to be ₦121.47, ₦ 1,347.41, ₦ 139.85, ₦ 51.58 and ₦ 65,501.94 respectively. The total variable cost during the lean period amounted to ₦ 59,430.70 per month and the total cost it was ₦ 60,395.96. Total revenue during the on-season of tomatoes was estimated to be ₦ 67,657.28, during the off-season it was ₦ 65,501.94. Gross margin for the peak period/ on season of tomato was estimated as ₦ 8,835.51 while off-season was estimated as ₦ 6,071.24. The net profit return for on-season of tomato was estimated as ₦ 7,870.25 while that of the off-season was estimated to be ₦ 5,105.98.

**Table 3: Profits made by Tomato Retailers during the On-season and Off-season of Tomato**

Costs and Returns	On-season Tomato (per month)	Off-season Tomato (per month)
Total variable cost	₦ 58,821.77	₦ 59,430.70
Total fixed cost	₦ 965.26	₦ 965.26
Total Cost	₦ 59,787.03	₦ 60,395.96
Total revenue	₦ 67,657.28	₦ 65,501.94
Gross Margin	₦ 8,835.51	₦ 6,071.24
Net Return(profit)	₦ 7,870.25	₦ 5,105.98

Source: Field survey, 2015

**Table 4: T-test results comparing profits of tomato retailers during off-season and on-season of tomato**

Variables	n	Mean	SD	T	df	P value	Remark
Profit of On-season	95	8080.32	3717.46	7.133	94	0.000	Significant
Profit of off-season	95	5314.95	2844.40				

Significant at  $P < 0.05$ 

Source: Field survey, 2015

The result of the analysis of a paired-samples t-test conducted on the variation between profits made in the off-season and on-season was tested at 5% level of significance. It revealed that there was significant difference in the profits made in on-season and off-season of tomato. Since the p-value which is 0.00 is lesser 0.05,

then it is concluded that there is significant difference between the profits made. These results suggest that there was a significant variation in the profits made in the two seasons. Profits made in the on-season were higher than that of off-season. This could be due to high volume of production during this period.

**Table 5a: Mean prices of fresh tomato/ kg during its on-season and off-season over the years 2009-2013**

Season of Tomato	Years	Number of months	Mean price of tomato/kg (₦)
ON-SEASON (October-March)	2009	6	101.5217
	2010	6	29.7267
	2011	6	145.3533
	2012	6	122.5617
	2013	6	105.6583
	<b>Total</b>	<b>30</b>	<b>100.9643</b>
OFF-SEASON (April-September)	2009	6	100.3617
	2010	6	110.0417
	2011	6	139.0000
	2012	6	109.5300
	2013	6	124.6000
	<b>Total</b>	<b>30</b>	<b>116.7067</b>

Source: OYSADEP Market Price of Agricultural Commodities (2009-2013)

Significant at  $P < 0.05$ **Table 5b: Analysis of variance of the prices of fresh tomato/kg during the on-season and off-season of tomato**

		Sum of Squares	Df	Mean Square	F	Sig.
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OFF-SEASON	Between Groups	5534.299	4	1383.575	3.012	.037
	Within Groups	11482.375	25	459.295		
	Total	17016.674	29			
ON-SEASON	Between Groups	45203.865	4	11300.966	7.745	.000
	Within Groups	36477.711	25	1459.108		
	Total	81681.576	29			

#### Test of hypothesis for the on-season of tomato

The result of the analysis of variance (ANOVA) was tested at 5% level of significance. It shows that there is variation in the price level over the years (2009-2013) marketing period of tomato during its on-season in urban market. Since the value of F calculated (7.745) is greater than F tabulated (2.76), the null hypothesis which says, "There is no variation in the price of tomato during its on-season in urban market" was rejected and the alternative which says "There is variation in the price of tomato during its on-season" was accepted.

#### Test of hypothesis for the off-season of tomato.

The result of the analysis of variance (ANOVA) was tested at 5% level of significance. It shows that there is variation in the price level over the years (2009-2013) marketing period of tomato during its off-season in urban market. Since the value of F calculated (3.012) is greater than F tabulated (2.76), the null hypothesis which says, "There is no variation in the price of tomato during the off-season in urban market" was rejected and the alternative which says "There is variation in the price of tomato in urban market during the off-season" was accepted.

**Table 6: Tukey HSD test to determine the mean price that varies over the years 2009-2013 during the on-season and off-season of tomato**

Year (Off-Season)	Number	Subset for alpha =0.05	
		1	2
<b>2009</b>	<b>6</b>	<b>100.3617</b>	
<b>2012</b>	<b>6</b>	<b>109.5300</b>	<b>109.5300</b>
<b>2010</b>	<b>6</b>	<b>110.0417</b>	<b>110.0417</b>
<b>2013</b>	<b>6</b>	<b>124.6000</b>	<b>124.6000</b>
<b>2011</b>	<b>6</b>		<b>139.0000</b>

Year (On-Season)	Number	Subset for alpha =0.05	
		1	2
<b>2010</b>	<b>6</b>	<b>29.7267</b>	
<b>2009</b>	<b>6</b>		<b>101.5217</b>
<b>2013</b>	<b>6</b>		<b>105.6583</b>
<b>2012</b>	<b>6</b>		<b>122.5617</b>
<b>2011</b>	<b>6</b>		<b>145.3533</b>

Source: OYSADEP Market Price of Agricultural Commodities (2009-2013)

The Tukey honestly significant difference test shows that during the on-season of tomato, the year 2010 has the least mean price and it showed very wide variation in mean price from the other years. The years 2009, 2013, 2012, 2011 belong to the same subset and as such they are not significantly different, that is they do not show any variation. During the off-season of tomato, the mean prices of the years 2009, 2012, 2010, 2013 belong to the same subset and as such they have almost equal mean prices. This shows that they are not significantly different, that is there is no variation between the prices in those years. The mean prices of the years 2012, 2010, 2013 and 2011 belong to the same subset. This shows that there is no variation between the mean prices. During the off season of tomato the years that showed variations in their mean prices were 2009 and 2011.

#### **CONCLUSION AND RECOMMENDATIONS**

Based on the findings of this study, females who are energetic and capable of working well on the marketing activities dominate tomato retailing business. Profits were higher during the on-season of tomato probably due to high volumes of sales. From the monthly retail prices per kilogram of fresh tomatoes obtained from Oyo state Agricultural Development Programme (OYSADEP), it was revealed that there were variations across the years of 2009-2013. The Tukey honestly significant difference test revealed that during the on-season of tomato, the year 2010 has the least mean price and it showed very wide variation in mean price from the other years. During the off-season of tomato, the years that showed variations in their mean prices were 2009 and 2011. The implication of price variation is that it causes instability in the income level of tomato producers and marketers. Based on this study, the following recommendations were made;

As it was observed from the results of the finding, that there were variations in price level, government should create buffer stock schemes

that will help to stabilize the market price of tomatoes by buying up supplies of the product when harvests are plenty and selling stocks of the products on to the market when supplies are low. The problem of price variations and profit variations can be curbed by tomato retailers by having a proper inventory control skills so as to avoid over stocking of tomato at a time in the store. This is because of the perishable nature of tomato and over stocking of tomato causes spoilage of the tomato due to lack of storage facilities. This makes retailers to sell the damaged tomatoes at lesser prices and this reduces their income. Processing should be encouraged.

The problem of price fluctuation can be reduced by the governments providing storage facilities. Also government should provide adequate transport facilities with good roads for easy movement of tomatoes, so that transportation cost can be minimal and this can reduce price fluctuation.

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