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## **Identifying the Role of Agricultural Loan in Reducing Seasonal Price Fluctuation of Agricultural Crops of Farmers in Bangladesh**

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### ***Abstract:***

*Agriculture is the heart of the economy of Bangladesh. But our agriculture is affected by many problems. Among many of the problems one of the most important problems is that the farmers are not getting fair price of their crops. There exists wide variation in the price of agricultural crops during on-season and off-season. Price remains very low during on-season and become very high during off-season. More supply than demand during on-season and less supply than demand during off-season is the main reason behind the price variation. Some factors are responsible for this imbalance between demand and supply. Among which the most important fact is the poverty of the farmers. Since most of the farmers of our country are poor, they sell their products during on-season at lower price for the need of urgent cash. If they are given agricultural loan at comfortable terms and conditions, then they will store crops instead of selling at lower price. This mechanism will balance the demand and supply conditions of agricultural crops at some extent. As a result, seasonal price variation of agricultural crops during off-season and on-season will reduce at some extent. We collected data of 350 respondents in 2013 from Dinajpur, Thakurgoan, Rangpur, Lalmonirhat, and Nilphamari districts and analyzed data by using frequency distribution, chi-square test etc. It has been revealed from our study that more than 80% farmers in Bangladesh wanted agricultural loan and 70% farmers opined that agricultural loan will reduce price variation of agricultural crops during on-season and off-season. So, government should take initiative to provide agricultural loans to farmers at comfortable terms and conditions.*

***Keywords:*** Agricultural loan, seasonal price, seasonal price variation, farmers

### **1. Introduction**

Agriculture is the backbone of the economy of Bangladesh. A lion share of GDP is contributed by agriculture. It is the main profession of people Bangladesh. About eighty per cent (80%) people of Bangladesh are dependent on agriculture directly. The rest ones also are related with agriculture indirectly. The industry of Bangladesh is agro-based. In agriculture based economies, rural population accounted on average for almost seventy per cent (70%) of total population, while agriculture accounted on average to twenty-nine percent (29%) of GDP in 2005 (World Bank 2008). So, if we want to develop our country then we must have to develop agriculture. Development of our economy is impossible without the improvement of agriculture. But it is a matter of great regret that most of the farmers of our country are poor. So our agriculture sector suffers from lot of problems. We can classify these problems into two broad heads. These two heads are (a) production related problems and (b) marketing related problems. The production related problems are low quality seeds, lack of fertilizers, lack of pesticides, lack of technology (conventional cultivation system), lack of appropriate agricultural education, unfavorable weather etc. On the other hand, the marketing related problems are lack of storage facilities, pricing problems, carrying problems etc. It is noted that with the help rapid scientific and technological advancement production related problems have been solved at large extent. Now the farmers are using high-quality seeds, fertilizers, pesticides etc. They are using power tiller, tractor, bulldozers and other various modern technological equipments and instruments to cultivate crops. But the

marketing related problems yet have not solved. The storage facilities (like cold store) of different crops are not enough in our country. Not only that the price of produced agricultural crops remains very low in on-season. Poverty of farmers, lack of sufficient storage facilities, and perishable nature of some crops compel farmers to sell their products during on- season. As a result, the supply of agricultural products exceeds its demand during on-season.

In our study we have given our attention on the role of agricultural loan to reduce seasonal price fluctuation of agricultural products. After the production of agricultural products, the farmers sell their products to collect funds. Since the farmers are needy, they are found to sell their products at lower price. During the harvest season, the price remains low because almost all the farmers sell their goods which leads to large volume of supply of agricultural products at market. The speculators and other businessmen purchase products, at lower price and sell at very higher price. As a result, the farmers are deprived. If farmers have sound amount of money, then they will store products instead of selling at lower price. So farmers should be given loan to conduct their agricultural operations smoothly.

### 1.1. Objectives of the Study

The main objective of our study is to identify the role of agricultural loan in reducing seasonal price fluctuation of agricultural crops of farmers in Bangladesh. The specific objectives are:

1. To identify the constraints faced by farmer.
2. To identify agricultural productivity.
3. To assess the role agricultural loan to store goods.
4. To find the pattern of seasonal price fluctuation.
5. To provide guidelines how the farmer can get rid of from the problems of seasonal price fluctuation.

### 1.2. Limitations of the Study

This study suffers from some limitations. Firstly, most of the farmers of our country are uneducated. So they were reluctant to give information. They tried to avoid answering some questions. They tried to underestimate some information due to the fear of tax or other purpose. They also tried to overestimate the information for the purpose of taking advantages such as subsidy, loan facilities etc. Secondly, due to the lack of sufficient finance and time, we did not able to collect information of farmers of whole country. We collected information only from Dinajpur, Thakurgoan, Rangpur Lalmonirhat, and Nilphamari districts. Thirdly, we faced a lot of difficulties to collect information from farmers since we collected information about the questions of qualitative nature. Finally, there are lots of forces which have impact on the price of agricultural crops such as poverty, demand and supply, government policy, market conditions, communication system, export-import trade etc. Among which we have given our focus on role of agricultural loan in reducing seasonal price fluctuation of agricultural crops in Bangladesh.

## 2. Methodology

The present study was endeavored to explore the role of agricultural loan in reducing the seasonal price fluctuation of agricultural crops in Bangladesh. Exploratory research has been selected as research designs. The sample size was three hundred and fifty (350) respondents of Dinajpur, Thakurgoan, Rangpur, Lalmonirhat and Nilphamary districts. We have used both primary and secondary data to conduct the research. For collecting secondary data various books, websites, articles etc. have been used. Primary data also have been collected from various farmers using questionnaire and interview method. Convenient and judgment sampling method have been used to collect data. The data have been collected in March-April, 2013 to conduct the research. We have used frequency distribution, Chi-square test statistics etc. to analyze the data.

### 2.1. Hypothesis

The following research hypothesis of the study was put forward for empirical testing:

$H_0$ : Loan cannot be played any role to reduce the seasonal price fluctuation of agricultural crops.

$H_1$ : Loan can be played role to reduce the seasonal price fluctuation of agricultural crops.

## 3. Literature Review

A lot of studies have been conducted to identify the role of agriculture in the economic development of a country, detect the problems and constraints associated with agriculture and provide guidelines to solve the problems of agriculture and make the price stable and hence reduce the seasonal price fluctuation of agricultural products.

According to Ahmed (1980) though Bangladesh inherited an agrarian economy, agriculture did not get due importance hitherto. The main drawback of our agriculture is the lack of finance as the vast majority of our farmers are living at or below subsistence level.

According to Khalily et al. (1997) credit is necessary for agricultural development vis-a-vis rural economic development.

In a developing country like Bangladesh, the banking system, as a whole, plays a vital role in the progress of its economic development by helping the disadvantaged people to become self-sufficient by providing them micro credit (Chowdhury et al. 2010). So if farmers get loan they would be able to do their operations effectively.

Ahmed (2010) observed that rural poverty reduction is possible by increasing agricultural production. To do so efficient spending of government budget and skilled human capital are crucial factors. Also findings suggest that, increasing the share of non-farm activities will help to poverty alleviation in rural Bangladesh. Both public and private initiatives are needed to support the farmers.

Robinson and Marguerite (2001) said among the economically active poor of the developing world, there is strong demand for small-scale commercial financial services-for both credit and savings. Where available, these and other financial services help low income people improve household and enterprise management, increase productivity, smooth income flows and consumption cost, enlarge and diversify their micro business and increase their incomes.

Shahabuddin et al. (1998) showed that very often price increase is determined by the seasonal pattern and not always by the market anomalies. Study has shown that spatial difference and market anomalies did not determine the price of rice market and rice market is integral in nature. Price difference is not only determined by the seasonal pattern it also depends on atmospheric changes. Among atmospheric conditions crisis of funds of farmer is an important factor that leads to price variations.

A paper of FAO shows that frequent changes in atmospheric conditions caused to vary agricultural outputs year to year and season to season. Due to this changes price of food commodities display wider inter-par and intra-year dispersion (FAO 1983).

The overall findings of the market survey regarding the prices of rice over the twelvemonths indicate that there had been seasonal variation of prices of rice and other food grains (Menon et al. 2000).

Islam and Rofikuzzaman (2009) said the rural people are mostly poor and hardly can buy a costly machine individually. Some moneyed farmers having a large quantity of agricultural lands possess some costly machines like, tractors, power tillers, power tiller operated seeders, combines etc. They use these machines in their own lands and also operate them on hiring basis in others' lands and earn a substantial return. But, the number of such farmers is very limited. These are the production related problems.

Bangladesh achieved much progress in production of food grain in the last two decades, but majority of the population cannot have adequate food on their plates every day. Because, most of them are either underemployed, or unemployed and they do not have enough purchasing capacity (Menon et al. 2000).

The dominant marketing channel of paddy/rice is the private sector, which includes be paris, miller, aratdars, wholesalers, retailers and the consumers. In this chain, the marginal producers and the poor are the affected groups. Due to the faulty market systems, once they have to sell their products at low price and again, they have to purchase their necessary food at high price in the lean time (Hossain 1991). In this situation agricultural loan can be played a pivotal role to stabilize price throughout the year.

The respondents' opinion about the major causes of price hike in all regions (according to priority) have been: natural disaster (flood, cyclone, drought etc.), inadequate supply of food grain in the market, less production of food grain/damage of crops, hoarding by traders and creation of artificial food crisis in the market, less supply and more demand in the market, problem of communication system, need to buy food grains from other districts/countries during lean period and other causes: political instability like hartal/general strikes, increase in fuel price (for transportation/irrigation etc.) (Menonet al. 2000).

These evidences reveal that there is urgent need of agricultural loan in Bangladesh and in spite of having lot of problems (such as unfavorable climate, drought, flood, load shading, lack of modern technology, scarcity and higher price of fertilizers seeds, dieseletc.) the farmers of our country have increased productivity at large extent. So now the main problem faced by the farmers is the lower price of their produced agricultural crops. Due to poverty, lack of storage facilities, perishable nature of some crops, political unrest, hartaletc. the farmers sell their products at lower price during the harvest season. But on the off-season the price of crops become very high due to unavailability of products and artificial crisis created by the middlemen. In this situation agricultural loan may play a vital role in reducing price variation. Though the researchers have given their attention on various factors, we are interested to see the effect of agricultural loan in reducing the seasonal fluctuation of agricultural products (afterthe production of crops) in Bangladesh. This price related problem deprives farmers from having reasonable price of their products. As most of the farmers of our country are poor, they sell their products during the harvest due to the necessity of money and lack of storage facilities. This leads to oversupply of products (during harvest) and hence reduces the price of agricultural products.

In this situation, if farmers get loan, then their need of money will be solved and they will be able to store their products to sell at future (during off season). This mechanism will balance the supply of agricultural products.

#### **4. Analysis and Discussion**

##### *4.1. Major Crops Produced by Farmers*

Many types of crops are produced in Bangladesh. Since our study area is Dinajpur, Thakurgoan, Rangpur, Nilphamary and Lalmonirhat districts we have identified the crops that are available in these areas. Paddy is the common crops in these areas. Besides paddy, wheat, potato, maize, Jute, tobacco, mustard, onion, garlic, turmeric, sweet guard, ground nut and Green chili etc. are main crops that are grown in these regions. Since paddy is the common crops, it is available throughout the Bangladesh. But tobacco is grown heavily in Rangpur and Lalmonirhat districts. It is important that we did not consider the products that cannot be stored due to their perishable nature for examples water melon, sugarcane, litchi, mango etc. We considered only products that can be stored easily at farmers' house.

##### *4.2. Average Amounts of Land*

The average acre of land per farmer is presented below:

Land possessed by individual farmer (acre) (a)	No. of farmers (b)	Total land (land x farmers) (acre) (c = a x b)	Average acres of land per farmer
0.20	1	0.20	(1425.48/350) =4.0728
0.25	1	0.25	
0.27	9	2.43	
0.30	5	1.50	
0.33	2	0.66	
0.40	1	0.40	
0.50	3	1.50	
0.54	2	1.08	
0.55	1	0.55	
0.60	31	18.60	
0.66	5	3.30	
0.70	1	0.70	
0.75	2	1.50	
0.80	2	1.60	
0.81	1	0.81	
0.85	2	1.70	
0.90	2	1.80	
0.95	1	0.95	
1.00	19	19	
1.25	3	3.75	
1.33	3	3.99	
1.50	8	12	
1.66	1	1.66	
1.75	1	1.75	
2.00	46	92	
2.30	1	2.30	
2.50	11	27.50	
3.00	51	153	
4.00	33	132	
4.50	2	9	
5.00	17	85	
6.00	5	30	
7.00	16	112	
7.50	2	15	
8.00	29	232	
9.00	9	81	
10	4	40	
11	1	11	
12	2	24	
14	1	14	
15	7	105	
19	1	19	
20	2	40	
25	2	50	
70	1	70	
Total	350	1425.48	

Table 1: Average acres of land of farmers  
Source: Field Survey, 2013

The average acre of land per farmer is 4.0728(Table-1). This figure reveals that farmers are poor. So they cannot buy all necessary raw materials of crop production timely and in enough amounts. Not only that they sell their crops at lower price for the need of money.

#### 4.3. Production of Different Crops

The productions of different crops are summarized below:

Name of the crops	Grand total of production (Mound/Acre) (a)	No. of respondents (b)	Average Production (Mound/acre)c = (a/b)
Paddy (medium quality)	18302	350	52.29
Potato	20919	229	91.35
Maize	15134	178	85.02
Wheat	1516	67	23.63
Tobacco	2323	77	31.17
Mustard	459	33	14.91
Onion	914	36	25.39
Garlic	635	27	23.52
Green Chili	3776	47	80.34
Jute	456	14	32.57
Turmeric	180	3	60
Sweet guard	1410	13	108.46
Ground Nut	49	4	12.25

Table 2: Productions of different crops  
Source: Field Survey, 2013

The figures in the Table 2 reveal that in spite of having some obstacles, the production of different agricultural crops is generally good. So we can say that the production related problems have been solved at some extent. But the production of different crops can be increased more if farmers have sound amount of money and other facilities. The farmers will be able to use modern agricultural technology, seeds, fertilizers etc. if they get loan on easier terms.

#### 4.4. Problems Faced by Farmers

The number of farmers who faced problems during cultivation and the number of farmers who did not face problems during cultivation period is summarized below:

No. of farmers who faced problems	Percent of farmers who faced problems	No. of farmers who did not face problems	Percent of farmers who did not face problems
340	$(340/350) \times 100 = 97\%$ (approximate)	10	$(10/350) \times 100 = 3\%$ (approximate)

Table 3: Problem faced by farmers  
Source: Field Survey, 2013

The figures in the Table 3 reveal that about 97% farmers said that they are facing problems regarding the cultivation of agricultural crops. The main problems faced by farmers are lack of money (poverty), lack of storage facilities, perishable nature of some crops, natural disasters (such as drought heavy rainfall, storm, cyclone, cider, typhoons, tornados, tidal bore etc., lack of quality seeds, lower price of produced crops, higher cost of production, instable market conditions, under developed communication system, hartal, political instability etc.

#### 4.5. Demand of Agricultural Loan

From the survey we have found that 290 respondents among 350 samples demand agricultural loan. It reveals that more than 80% farmer demand agricultural loan.

#### 4.6. Amount of Loan Demanded by Farmers

The amounts of (range) of loan demanded by various farmers are summarized below:

Amount of loan (in thousands)	Mid-point of class (X)	No. of respondents	Weight in Percent	d = (X-A) =(X-90.5)	fd= (Frequency x deviation)	Arithmetic mean of amount of loan
1-30	15.5	27	9.31	-75	-2025	92.686
31-50	40.5	61	21.04	-50	-3050	
51-80	65.5	55	18.97	-25	-1375	
81-100	90.5(A)	63	21.72	0	0	
101-150	125.5	35	12.07	35	1225	
151-200	175.5	27	9.31	85	2295	
201-250	225.5	16	5.52	135	2160	
above 300	324.5	6	2.07	234	1404	
Total		N=290	100%		$\sum fd = 634$	

Table 4: Amounts of (range) of loan demanded by farmers  
Source: Field Survey, 2013

Where, A=Assumed mean

f = Frequency

$\bar{X}$ = Arithmetic mean

d= Deviation

fd= Frequency x Deviation.

N = Total frequency.

$\sum fd$ = of sum of total deviations

$A = \frac{N}{2}$ th item

$= \frac{8}{2} = 4^{\text{th}}$  row

The arithmetic mean is calculated as below:

The arithmetic mean ( $\bar{x}$ ):

$$\begin{aligned}\bar{X} &= A + \frac{\sum fd}{N} \\ &= 90.5 + \frac{634}{290} \\ &= 92.686\end{aligned}$$

The figures in table:4 show of about 9.31% people want loan of 1,000 - 30,000 (Tk.), 21.04% people want loan of 31,000 - 50,000 (Tk.), 18.97% people want loan of 51,000 - 80,000(Tk.), 21.72% people want loan of 81,000 - 100,000 (Tk.), 12.07% people want loan of 10,1000 - 150,000 (Tk.), 9.31% people want loan of 151,000 - 200,000 (Tk.), 5.52% people want loan of 201,000 - 2,50,000 (Tk.), and 2.07% people want loan of more than 300,000(Tk.). The arithmetic mean indicates that on an average the people want loan of 92,68,6(Tk.).

It is important that the amount of loan demanded by various farmers is not same. The amount of loan depends on socio-economic weather and market conditions of different region.

#### 4.7. Duration of Loan

The time period for which the farmers want loan is summarized below in table:

Month (X)	Number of respondents (f)	Weight in percent	Deviation, d = (X-A) = (X-12)	Frequency x deviation, fd= (f x d)	Arithmetic mean of month
6	37	12.75%	-6	-222	12.290
9	30	10.34%	-3	-90	
12 (A)	195	67.24%	0	0	
18	10	3.45%	6	108	
24	18	6.21%	12	288	
Total	N = 290	100%		$\sum fd = 84$	

Table 5: Time period for loan

Source: Field Survey, 2013

The arithmetic mean is calculated as below:

The arithmetic mean,  $\bar{X}$ :

$$\bar{X} = A + \frac{\sum fd}{N} = 12 + \frac{84}{290} = 12.290 \text{ Month}$$

A is calculated as below:

$$A = \frac{N+1}{2} = \frac{5+1}{2} = 3^{\text{rd}} \text{ row}$$

It is clear from Table 5 that 12.76% farmers demand loan for 6 months, 10.34% farmers demand loan for 9 months, 67.24% farmers demand loan for 12 months, 3.45% farmers demand loan for 18 months and 6.21% farmers demand loan for 24 months. The arithmetic mean indicates that on an average the farmers want loan for 12.290 month.

#### 4.8. Access of Loan for Farmers

The access of loan for farmers is presented below:

No. of farmers who wanted loan	Per cent of farmers who wanted loan	No. of farmers who got loan	Per cent of farmers who got loan	Number of farmers who wanted but did not get loan	Per cent of farmers who did not get loan
290	$(290 \div 350) \times 100 = 83\%$	100	$(100 \div 350) \times 100 = 28.57\%$	290-100 = 190	$(190 \div 290) \times 100 = 54.30\%$

Table 6: Access of loan for farmers

Source: Field Survey, 2013

It is clear from Table 6 that about 83% farmers wanted agricultural loan to cultivate crops. But only 28.57% got loan to cultivate crops. So 54.30% farmers did not get agricultural loan for cultivating agricultural crops. So the government should take initiatives to give loan to farmers at comfortable terms and conditions which will foster the agricultural productions and help farmers to get fair price of their crops. Because agricultural loan will help farmers to store crops instead of selling at lower price during on-season.

#### 4.9. Interest Rate of Loan

The interest rates are below:

Interest Rate % (X)	No. of respondents (f)	Weight	Deviation, $d = (X-A) = (X-17)$	Frequency x deviation, $fd = (f \times d)$	Arithmetic mean of interest Rate
8	2	0.02	-9	-18	17.07
10	7	0.07	-10	-70	
12	4	0.04	-5	-20	
13	2	0.02	-4	-8	
14	9	0.09	-3	-27	
15	17	0.17	-2	-34	
16	14	0.14	-1	-14	
17(A)	1	0.01	0	0	
18	26	0.26	1	26	
20	13	0.13	3	39	
30	1	0.01	13	13	
38	1	0.01	21	21	
40	1	0.01	23	23	
50	1	0.01	33	33	
60	1	0.01	43	43	
Total	N = 100	1		$\sum fd = 7$	

Table 7: Interest rate of loan

Source: Field Survey, 2013

The arithmetic mean is calculated as below:

The arithmetic mean ( $\bar{x}$ ):

$$\bar{X} = A + \frac{\sum fd}{N} = 17 + \frac{7}{100} = 17.07$$

A is calculated as below:

$$A = \frac{N+1}{2} \text{th item} = \frac{15+1}{2} = 8^{\text{th}} \text{ row}$$

Most of the farmers took loan from NGOs and Rajshahi Krishi Unnayan Bank. The rate of interest of Rajshahi Krishi Unnayan Bank is reasonable. But the amount of loan is not sufficient for farmers. Again, the interest rate of NGO is very high and amount also not sufficient. The average rate of interest for loan of farmers according to this study is 17.07% (Table 7). It is important that this interest rate is very high for farmers.

#### 4.10. Price during on-season

Opinion of farmers with respect to the price of different agricultural crops during on-season is below:

Price	Very High	High	Moderate	Low	Very low
No. of respondents	0	4	19	291	36
Percentage	$(0 \div 350) \times 100 = 0\%$	$(4 \div 350) \times 100 = 1.14\%$	$(19 \div 350) \times 100 = 5.5\%$	$(291 \div 350) \times 100 = 83\%$	$(36 \div 350) \times 100 = 10.29\%$

Table 8: Price during on-season

Source: Field Survey, 2013

This summary of table-8 revealed that about 83% farmers said on-season price is 'low', 10.29% said 'very low', 5.5% said 'moderate' and 1.14% said 'high'. No farmer said that on-season price is 'very high'.

#### 4.11. Price during off-season

Opinion of farmers with respect to the price of different agricultural crops during off-season is below:

Price	Very High	High	Mode rate	Low	Very Low
No. of respondents	40	240	17	3	0
Percentage	$(40 \div 350) \times 100 = 25.71\%$	$(240 \div 350) \times 100 = 68.57\%$	$(17 \div 350) \times 100 = 4.86\%$	$(3 \div 350) \times 100 = 0.86\%$	$(0 \div 350) \times 100 = 0\%$

Table 9: Price during off-season

Source: Field Survey, 2013

The summary of Table 9 reveals that 68.57% farmers said off-season price is 'high', 25.71% said 'very high', 4.86% said 'moderate', 0.86% said 'low' and no farmer said 'very low'.

#### 4.12. The Average Price during on-season and off-season

The average price of different crops during on-season and off-season is below:

Name of crops (a)	No. of respondents (b)	On-season		Off-season	
		Grand Total of Price (Tk/Kg) (c)	Average price (Tk/Kg) (d=c/b)	Grand Total of Price (Tk/Kg) (e)	Average price (Tk/Kg) (f=e/b)
Paddy	350	4481	12.80	5983	17.09
Potato	227	2301	10.14	4798	21.14
Maize	171	1700	9.94	2506	14.65
Wheat	64	1069	16.70	1424	22.25
Tobacco	78	2489	31.91	3150	40.38
Mustard	36	1307	36.31	1733	48.14
Onion	39	745	19.10	1407	36.10
Garlic	26	625	24.04	1192	45.85
Green chili	46	1047	22.76	3008	65.39
Jute	15	311	20.73	437	29.13
Turmeric	3	25	8.33	40	13.33
Sweet guard	13	73	5.62	151	11.62
Groundnut	5	92	18.4	115	23

Table 10: Average price of different crops during on-season and off-season

Source: Field Survey, 2013

The summary of Table 10 show that there exists wide variation between the price of agricultural crops during off-season and that of on-season. Price remains low during on-season and becomes very high during off-season. So the necessary steps should be taken to balance the prices between two seasons.

#### 4.13. Comparison of Prices between on-season and off-season

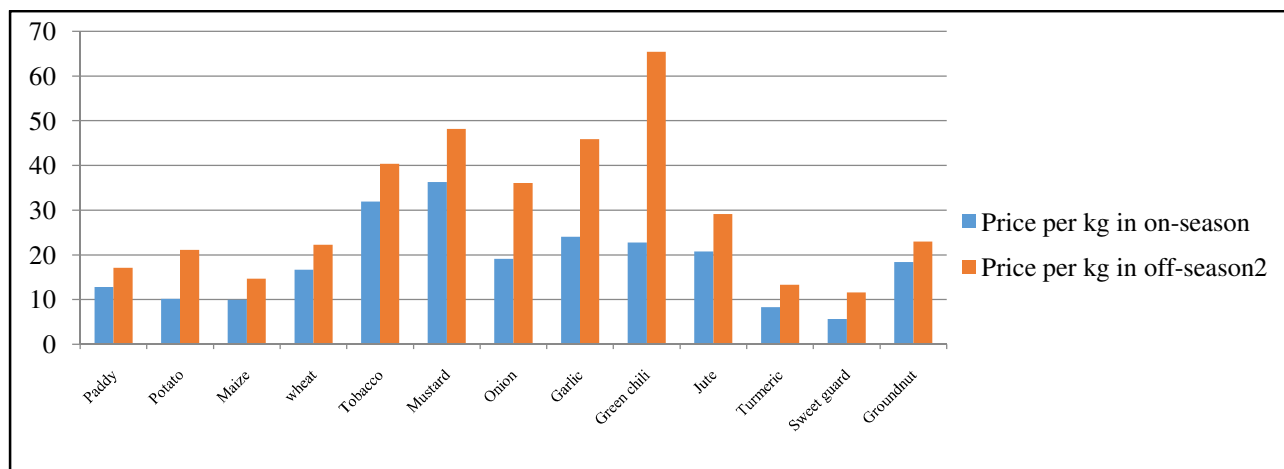


Figure 1: Price of different crops in on-season and in off-season

Source: Field Survey, 2013



The price of different crops during on-season and off-season is compared below with the help of diagram.

#### 4.14. Reasons Why Price Remain Low during On-Season

It is known to us that price remains low during on-season. The main reasons why price remain low during on-season are-

1. Heavy production of agricultural crops during on-season. As a result, huge amounts of supply exist.
2. Poverty of farmers. Due to poverty the farmers sell their products during on-season instead of storing crops.
3. Perishable nature of some crops. Due to perishable nature they cannot be stored.
4. Lack of storage facilities. Storage facilities in our country are not sufficient. So farmers are bound to sell crops,
5. Inappropriate agricultural policy of government.
6. Defected transportation and communication system which hinder the proper movement and distribution of agricultural crops.
7. Hartal, demonstration strike etc.

All these factors jointly, increase the supply of agricultural crops during on-season. So, supply exceeds demand. As a result, price remains low during on-season.

#### 4.15. Reasons Why Price Remain High during Off-Season

It is known to us that price of agricultural crops become high during off-season. There are some reasons behind this. Due to poverty, lack of storage facilities, perishable nature of some products, under developed transportation, and communication systematic. the farmers sell their products during on-season. So, the agricultural products are concentrated in few hands (Middlemen). The middlemen charge higher price of products as the controlling power of products with respect to supply remain under middlemen. As a result, the demand and supply conditions become imbalanced as demand exceeds supply. Not only that the failure of government to make appropriate agricultural policy to protect farmers right also increase the price of agricultural crops during off-season.

#### 4.16. Role of Agricultural Loan in Reducing Seasonal Price Fluctuation

We want to determine whether agricultural loan can be played role in reducing seasonal price fluctuation of agricultural crops. Opinion of 350 respondents has been collected to test the hypothesis. We have tested the null hypothesis at 5% significance level that loan cannot be played any role in reducing seasonal price fluctuation of agricultural crops. The summary value of respondents is below:

Opinion	Against of role of loan	In favor of role of loan
Frequency (No. of respondents)	105	245
Percentage	30%	70%

Table 11: Summary value of respondents' opinion  
Source: Field Survey, 2013

#### ➤ Test of hypothesis:

$H_0$ : Loan cannot be played any role to reduce the seasonal price fluctuation of agricultural crops.

$H_1$ : Loan can be played role to reduce the seasonal price fluctuation of agricultural crops.

On the basis of null ( $H_0$ ) hypothesis we should expect,  $E = \frac{350}{2} = 175$

Now, we apply chi-square test statistic

$$\begin{aligned}\chi^2 &= \sum \frac{(O - E)^2}{E} \\ &= \sum \left( \frac{O_i^2}{E_i} \right) - N\end{aligned}$$

Where, O= Observed frequency

E= Expected frequency

N = Number of respondents

$$\begin{aligned}\chi^2 &= \frac{(105)^2}{175} + \frac{(245)^2}{175} - 350 \\ &= 406 - 350 \\ &= 56\end{aligned}$$

At, 5% significance level with 1 degree of freedom (2-1), the critical value of  $\chi^2$  is 3.84. Since our calculated value is greater than critical value (56 > 3.84), the null hypothesis is rejected.

So we can say that the agricultural loan can be played role in reducing seasonal price fluctuation of agricultural crops in Bangladesh. It is the opinion of 70% respondents. So the government should take initiatives to give loan to farmers at comfortable terms and conditions which will foster the agricultural productions and help farmers to get fair price of their crops. Because agricultural loan will help farmers to store crops instead of selling at lower price during on-season.

## 5. Recommendations

The following recommendations are suggested to tackle the drawbacks that are creating problems to the agriculture of Bangladesh:

1. A sufficient amount of loan is to be given to the farmers at comfortable and easier terms and conditions. To do so, the government has to be taken necessary steps so that loan does not create burden on farmers. A sufficient amount of loan will help farmers to use quality seeds, fertilizers, pesticides etc. and store crops that can be sold at fair price at an extended period of time.
2. The farmers of our country should formulate a strong, effective and efficient National Farmers' Association. The association will help farmers to ensure their rights properly.
3. The government should formulate a central agricultural planning committee. The duty and responsibility of that committee will be the formulation and implementation of policy to develop the agricultural sector of our country. They should understand that the development of Bangladesh is not possible without the development of agriculture and agriculture cannot be developed by depriving farmers.
4. The government should take necessary steps so that the farmers can use the modern technology in their agricultural operations.
5. Bangladesh Agriculture Development Corporation (BADC) should take necessary steps so that the farmers can use quality seed, quality fertilizers, pesticides etc. Since the farmers are poor, the government should provide loan to farmers on easier terms and conditions.
6. Natural disaster causes serious damage of our agricultural crops every year. Agricultural insurance can be encouraged to minimize the loss. Precautionary measures are to be taken before natural calamities
7. Construction of sufficient storage facility is the prerequisite condition for the development of agriculture in Bangladesh. Many crops are damaged due to their perishable nature. If sufficient storage facilities can be developed, then a lot of crops can be protected from damage. These stored crops can be sold at future time and this mechanism will balance the price during on-season and off-season.
8. Agricultural loan is to be given for sufficient period of time so that the farmers can arrange themselves.
9. The rate of interest on agricultural loan should be kept at minimum, so that it does not create burden on farmers. The government should give subsidy to bank for granting agricultural loan at lower interest. This is to be done for the protection of our agriculture sector from threat. It is important that the agricultural loan is to be given only to eligible farmers by proper search and investigation.
10. The lack of proper monitoring of loan increase the possibility of loan default. So proper monitoring of loan should be ensured by the loan providing institution.
11. The formalities of loan sanction needed to be minimized.
12. The sanction of loan on political consideration must be stopped. The loan is to be given to farmers by considering their economic conditions. This will minimize the risk of loan default and concentration of loan in few hands.
13. The formalities with respect to sell the mortgaged property under loan security, is also needed to be minimized.
14. The government has to purchase agricultural products from farmers by fixing the upper and lower limit of price of crops.
15. Government should take proper steps to export the surplus agricultural products.
16. The government should take all necessary steps to make the market of agricultural crops efficient, so that the farmers get fair price of their products. If the farmers do not get fair price of their crops, they will stop the production of agricultural crops and food shortage will be serious.

In brief these are the recommendations for the drawbacks of agriculture in Bangladesh.

## 6. Conclusion

Agriculture is the base of economy of Bangladesh. Almost all the people of our country are dependent on agriculture for their earnings. The development of our country depends on the sound and healthy agriculture. But it is a matter of great sorrow that the agriculture of Bangladesh suffers from lot of problems. These problems are lack of money (poverty), lack of storage facilities, perishable nature of some crops, natural disasters (such as drought, heavy rainfall, storm, cyclone, tidal bore etc.), lack of quality seeds, lower price of produced crops, higher cost of production, instable market conditions, under developed communication system, hartal, political instability etc.

All these problems jointly hinder the growth and development of agriculture sector. Already we have classified these problems into two broad heads, viz. the production related problems and marketing related problems. We also have seen that the production related problems have been solved at larger extent. So, the existing crucial problems is the marketing related problems such as lack of storage facilities, low price of produced agricultural crops, carrying problems, transportation problems, hartal, demonstration etc. By taking the farmers opinion, we have seen that most of the farmers of our country are poor. They sell their produced crops instantly after harvest, for the need of money. When most of the farmers will sell their crops during on-season for the need of cash, the supply of agricultural crops increases rapidly in the market. As a result, supply exceeds demand and price become very low. Again the price becomes very high during off-season since the middlemen create artificial crisis and charge higher price of agricultural crops.

When farmers get sound amount of loan at comfortable terms and conditions then they will store products instead of selling them at lower price during on-season if storage facilities are available. This mechanism will balance the demand and supply condition of agricultural products and price will be stable. So, the government has to take initiatives so that the farmers get sound amount of loan at

comfortable terms and conditions. In our study we have seen that more than 80% farmers in Bangladesh wanted agricultural loan and 70% farmers said that agricultural loan will play role in reducing price variation during on-season and off-season.

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**Appendix-1**

**Questionnaire**

Dear Respondents,

We like to conduct a study on “Identifying the Role at Agricultural Loan in Reducing the Seasonal Price Fluctuation of Agricultural Crops of Farmers in Bangladesh.” The findings of study will help us to identify the role of agricultural loan in reducing the seasonal price fluctuation of agricultural crops of farmers and helping farmers to get loan by drawing the attention of government and other concerned parties.

Your opinion is very important regarding the following facts to conduct the study.

- a. Name..... b. Age.....
- c. Gender..... d. Profession..... e. District.....
- f. Police Station..... g. Date.....

Please give your opinion about the following factors:

1. Mention the name of the crops you produce.

.....  
 .....

2. How many acres of land do you have?.....

3. Mention the mound of crops per acre.

- a. rice                      b. wheat                      c. maize                      e. jute                      f. sugarcane                      g. mustard
- i. garlic                      j. others

4. Do you face any problem regarding the cultivation of crops?

- a. yes                      b. no

5. If yes, mention the problems.

.....  
 .....

6. Do you want to get agricultural loan to cultivate crops?

- a. yes                      b. no

7. If yes, how much money do you want (in thousands)?

- a. 1- 30                      b.31- 50                      c.51- 80                      d.81- 100                      e. 101- 150                      f.151-200                      g.201-250
- h. above 300

8. For how long do you want loan (in months)?

- a.3                      b.5                      c.9                      d. 12                      e.18                      f.24                      g.36

9. Did you take loan from any source for agriculture purpose?

- a. yes                      b. no

10. If yes, mention the source.

.....

11. What was the annual interest rate on the loan you took?

.....

12. What do you think about the price of your crops during on-season?

- a. Very high                      b. High                      c. Moderate                      d. Low                      e. Very low

13. What do you think about the price of your crops during off-season?

- a. Very high                      b. High                      c. Moderate                      d. Low                      e) Very low

14. Mention the price of your main crops during on-season and off-season (Tk./Kg).

on-season	off-season

15- Mention the reasons why price remain low in on-season

.....  
.....

16. Mention the reasons why price remain high in off-season

.....  
.....

17- Do you think that if you get loan, seasonal price variation will remove?

- a. yes
- b. no

18- If yes, how?

.....  
.....

19. If not, why?

.....  
.....

Thank you very much for your cordial cooperation.

Signature.....