

## Analyze The Contribution of Bangladesh Krhisi Bank in The Development of Agricultural Sector in Tangail District, Bangladesh

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### Abstract:

The economy of Bangladesh highly depends on Agriculture. The significant portion of GDP comes from agricultural sector. In this paper, we have explored how Bangladesh Krishi Bank (BKB) contributes on agricultural sector of Tangail district (south zone). We have explained the trend of loan disburse, loan recovery, deposit and profit of nine branches of BKB in tangail south zone from 2011-2015. This study discuss the pattern of loan disburse and recovery on specific three sector named crops, fisheries and livestock. The finding shows that approximately 70% of total loan are given to crops sector, 20% on fisheries and remaining 10% on livestock sector and the amount of loan distributed during the period 2011-2015. We have used balanced panel data and fixed effect model for regression to find out the relationship among loan recovery and loan disburse, deposit and profit. The findings tell us loan disburse, deposit, profit have a relation with loan recovery but loan recovery has statistically significant ( $p < .05$ ) relationship with loan disburse and deposit. These studies suggest that agricultural credit helps to enhance the development of agricultural activities in Tangail district. As a result overall production of agricultural products increased which helps to meet up the local and national demand.

**Keywords:** Agriculture, Development, Loan disburse, Loan recovery, Deposit, Profit

## 1. Introduction:

Agriculture is essential to reducing poverty and hunger, with a 34 percent share of GDP in low income countries. Three out of every four poor people in developing countries live in rural areas and 2.1 billion survive on less than \$2 a day. Majority of people in developing countries live in rural areas directly or indirectly are involved in agricultural activities. In these countries, agriculture is the driving force of the economy and the other sectors of activity such as industry, commerce, and public and private services are largely depend on it. About 85% of the population directly or indirectly depends on agriculture in Bangladesh Agriculture sector plays an indispensable role in the overall economic development of Bangladesh and it is regarded as the lifeline of Bangladesh economy. It is also a fundamental social sector concerned with issues like food and nutritional security, income generation, poverty alleviation and growth. Strengthening this sector requires amongst others better accessibility to financial services. The performance of this sector has an overwhelming impact on major macroeconomic objectives like employment generation, poverty alleviation, human resources development and food security and economic growth. So the proper development of the country cannot be thought of without the proper development of its agricultural sector specially in developing countries. In this aspect, formal sector such as the banking system acts as a major contributor for the development of this agricultural sector in Bangladesh. **Bangladesh Krishi Bank (BKB)** and **Rajshahi Krishi Unnayan Bank (RAKUB)**. These banks are relentlessly trying to offer support for the advancement and development of the agricultural sector of the country. They are continuously helping the farmers to become self sufficient by providing them short loan. Bangladesh Krishi Bank (BKB) established in 1973 as a specialized government bank for agricultural development under the Bangladesh Krishi Bank Order (P O No. 27 of 1973). It has around 1037 branches all over the country. Most of the branches are functioning in rural area. In Tangail district there are 36 branches of **Bangladesh Krishi Bank (BKB)**. BKB provides credit facilities to individual and corporate bodies engaged in crop production, horticulture, forestry and fisheries. It also offers financial and technical assistance to agro-based small and cottage industries. Mainly we have focused on the pattern and distribution of loan among different sectors like crops, livestock and fisheries in the area of the south zone of Tangail. We have also highlighted in which sector **BKB** gives more importance regarding the loan. Most essentially, we have given importance how much loan the bank will recover and the association among loan, recovery, deposit and profit.

### 1.1. Objectives of the Study:

1. To explore main sectors of agricultural loan.
2. To evaluate the agricultural credit patterns among different sectors.
3. To evaluate the relationship in recovery with loan disbursement, deposit and profit.

### 1.2. Literature review:

Many national and foreign experts and agencies take on number of studies to evaluate performance of agricultural banks in Bangladesh. Some of the notable ones are below:

Khanam, Hasan (2013) in their article “Evaluation of management of agricultural credit- a case study on BKB” showed that Large portion of farmers in Bangladesh are landless and their savings is negligible. So poor farmers are depends on loan to many lenders at a extortionate rate

of interest or banks like Bangladesh krishi Bank which faces financial crisis because inconsistent pattern of loan recovery and fund allocation. High percentage of non-performing loan reducing profitability of Bangladesh Krishi Bank.

Mahumud, Hossain and Sultana (2013) in their study “An empirical analysis of the impact of agricultural banking industry profitability in Bangladesh : An evaluation of internal indicators of RAKUB” observe that net profit have positively related with manpower, no. of branch, total deposit, loan and advance, loan recovery and total income while expenditure was negatively associated with net profit. They recommended that bank should disburse loan with easy condition that will make bank to recover loan at a consistent pattern in every year which has a positive impact on the bank profitability.

Uddin (2005) in his article examined the costs involved loan received by the farmer in rural areas and the purpose of loans. The study found out that the real cost of loan is much higher than the official rate.

Prince (2004) in his article examined the micro finance pattern of rural village, where Bangladesh Krishi bank was the only formal source of credit. The study found out that village people prefer BKB loan because of easier for obtaining loans, avoiding harassment, exploiting the advantage of getting larger volume of loans, maintaining good relationship with the bankers.

Ali (1989) in his article found that the loanees of the study village needed loan for capital expenditure, for current expenditure, for investment in small trade, for family consumption and for repayment of old debt. They (the loanees) resorted to institutional and non – institutional sources of credit 40.92% and 21.56% respectively. The study concluded that supervisors of the BKB were insufficient and the overall supervision was ineffective.

## **2. Methodology:**

This study is anticipated to envision the contribution of Bangladesh krishi Bank (BKB) on agricultural development through agricultural loan in Tangail district. In this study we have used the data from secondary sources. The related data and information have been collected from nine branches of Bangladesh krishi Bank, Tangail district (south zone). We have also reviewed relevant articles and literature on this context. We have assessed the data of these nine branches in Tangail during the period 2011-2015. We have used Microsoft Excel to tabulate and graphical presentation. In this study we have both cross sectional and time series data. So we have introduced panel data regression model to explore the relationship between independent and dependent variables. For regression STATA are used in this study.

## **3. Main sectors of agricultural loan:**

Bangladesh Krishi Bank provides loan facilities to different sectors of agricultural production specially crops production, fisheries and livestock. It also offers both technical and financial assistance to agro based industry and continue to make an impact in development of agricultural sector in Bangladesh. BKB is supposed to give preference to small and marginal farmers for the aim of to achieve socio-economic equity and welfare of the country. Bangladesh Krishi Bank, Tangail south zone serves with same objectives. Among three main sectors Banks gives most preference to crops production. Around 60- 70% of total loan finance to crops production. It offers short, medium and long term loan for crops production, processing and marketing. Banks

offers short term loan for seasonal agricultural production activities, the Medium term loan are sanctioned for acquisition of farm machinery, pumps, dairy and poultry etc. long term loans for capital expenditures including purchase of tractors, power tillers or shallow tube well. As a mention earlier, loan on crops production gets highest priority, out of total loan allocation around 60-70% is devoted for crops financing. The rate of interest in this sector is relatively low 8%. Rate of interest may vary time to time. Land owner, Sharecroppers and Marginal farmers are the target groups for the loan. Bangladesh Krishi Bank provides loan for excavation, reexcavation of ponds, establishment of hatcheries and new fisheries projects. Rate of interest in this sector is relatively high compare to crops sectors around 11%.BKB also offers loan in live stock sector like poultry farm, Dairy farm and Goatery. In this particular paper we focus on performance of loan disbursement, loan recovery of three main sectors such as crops, fisheries and live stock of BKB, Tangail south zone. Following diagrams provide amount of loan disbursement, loan recovery of BKB, Tangail south zone from 2011 to 2015 and distributions of loan allocation and loan recovery among three sectors.

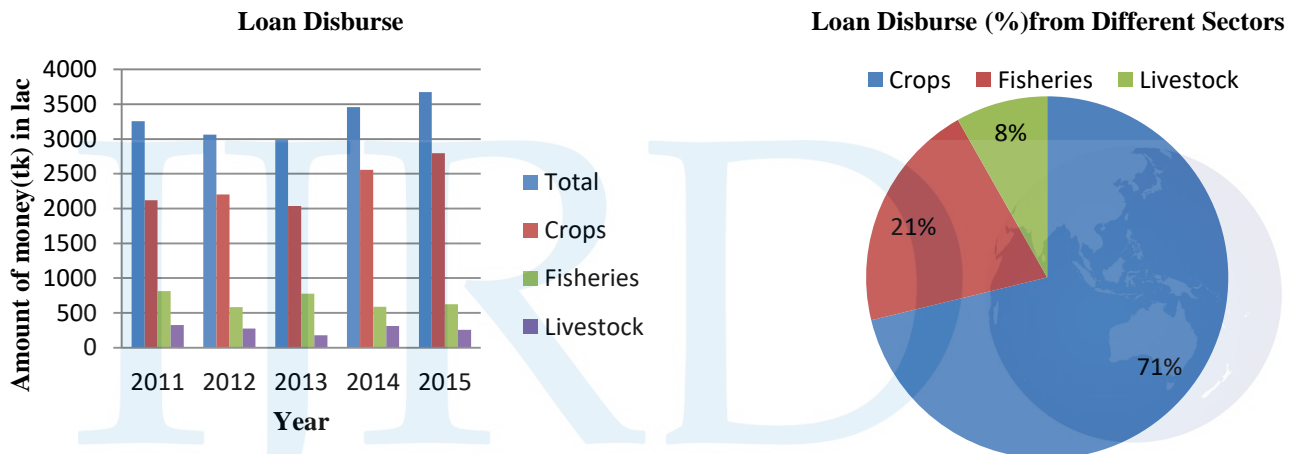


Figure:1

In figure 1, the bar chart deals with total amount of loan disbursement and distribution of these loan into some major sectors such as crops, fishery and livestock of Bangladesh krishi bank, Tangail south zone from 2011 to 2015. Crops are the most important sector in Bangladesh. Over 50% of total labor force is engaged in this sector. So as expected Bangladesh krishi bank gives highest priority to crops loan considering labor intensity and contribution to national economy. From figure1, it is seen that an increasing trends of disbursement of loan from 2013 to 2015 because budget increased significantly in that period. In 2013 loan amount of loan disbursement was 2000crore which increases 2500crore in 2014 and sharply increases to 2700 in 2015. In 2013 loan disbursement in fishery increases because interest rate on loan of fish sector decreases from 14% to 11%.

From the figure 1(pie chart) we can see the allocation of loan disbursement of Bangladesh Krishi bank, Tangail (south zone) in three major sectors in agriculture production. From the pie chart it is clear that the majority of loan disburse in crops sector from 2011 to 2015. Nearly 71% of total loan disburse in crops sector, 21% in fisheries and 8% in livestock respectively.

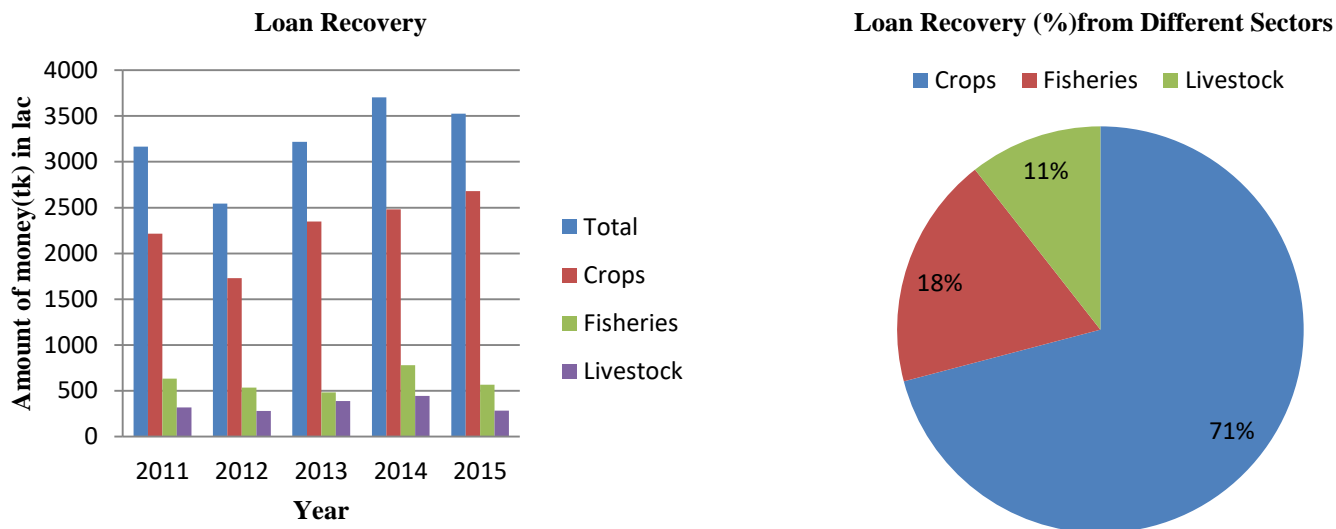


Figure: 2

Figure 2 represents Total amount of loan recovery from 2011 to 2015. As expected substantial portion of loan recovery comes from crops sector because of huge disbursement in this sector. In 2012 loan recovery decreased by 1000 lac because lack of fair price of agricultural product, natural disaster and misuse of loan. But from 2013 Bank management and regional office take some steps to enhance recovery rate. Such measures are increasing supervision and monitoring of loan recovery activity, increasing loan recovery camps and number of field workers and some legal action against loan defaulters. So in 2012 loan recovery was 2100crore next years' recovery increases to 3100crore and in 2014 it was 3600crore. In 2012, loan recovery rate in livestock sector reduces because of bird flu.

Figure 2(pie chart) depicts sector wise loan recovery of Bangladesh Krishi bank, Tangail (south zone).As majority of loan disburse in crops sector brings major recovery from this sector around 71% and rest comes from other two sectors such as fisheries and livestock respectively 18% and 11%.

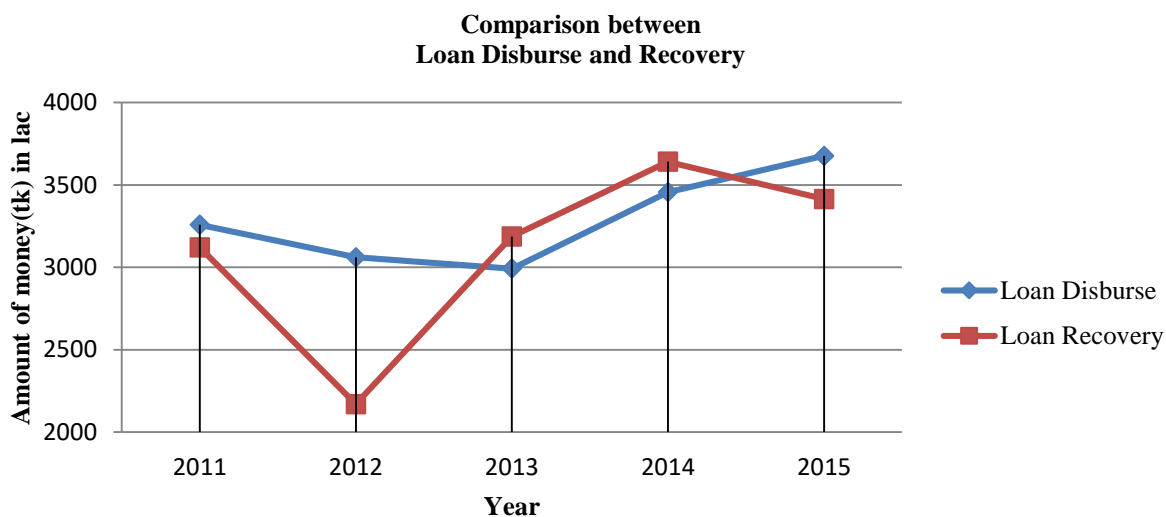


Figure:3

In the figure 3, we compare total loan disbursement with loan recovery of each year from 2011 to 2015. In 2011 gap between loan disbursement and loan recovery was not significantly large but from 2012 this gap become much wider than any other time. It is because of low recovery rate at that time. The reason for low recovery in 2012 is combination of natural disaster like flood and lack supervision of field officers but from 2013 because of pump action like increasing recovery camps, monitoring and legal actions against defaulters leads to increase recovery rate, even bank's flexible regulation about overdue loan rescheduling helps as well. So gap between disbursement and recovery reduce significantly.

### 3.1. Analysis the Panel data Regression:

In our study, we are interested to find out how loan recovery(Y) depends on the real value of loan disburse( $X_2$ ), deposit( $X_3$ ) and profit( $X_4$ ). We have obtained data on nine branches of Bangladesh Krishi Bank (BKB) in Tangail district, south zone. Data for each branch on the preceding four variables are available for the period 2011-2015. So we have nine cross-sectional units and 5 time periods and therefore, we have 45 observations. In panel data the same cross-sectional unit (nine branches of BKB) is surveyed over time. We will do panel data regression to find the relationship between dependent and independent variables. There are several reasons of using panel data regression model. Panel data relate to individuals, firms, states, countries, etc. over time, so heterogeneity exist in components. Panel data estimation can take such heterogeneity explicitly into account by allowing for individual-specific variables. Panel data give more informative data, more variability, less co-linearity among variables, more degrees of freedom and more efficiency rather than cross-section or time series data. In this panel data regression we will use two methods one is the Fixed effect model and another is Random effect model. After that we will do Hausman test to see which method is appropriate for our analysis.

Fixed effect model: The fixed effect method considers heterogeneity or individuality among nine branches having its own intercept value. The term "fixed effects" is due to the fact that, although the intercept may differ across individuals (nine branches), each individual's intercept does not vary over time; that is, it is time invariant. So we write the model as,

$$Y_{it} = \beta_i + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + u_{it}$$

$$i=1,2,3,4,\dots,9$$

$$t=1,2,3,4,5$$

Random effect model: Instead of treating  $\beta_{1i}$  as fixed, we assume that it is a random variable with a mean value of  $\beta_1$ . And the intercept value for an individual branch can be expressed as

$$\beta_{1i} = \beta_1 + \varepsilon_i \quad i = 1, 2, \dots, N$$

where  $\varepsilon_i$  is a random error term with a mean value of zero and variance of  $\sigma_\varepsilon^2$ . Here our nine branches have a common mean value for the intercept ( $= \beta_1$ ) and the individual differences in the intercept values of each company are reflected in the error term  $\varepsilon_i$ . So we may write

$$Y_{it} = \beta_i + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \varepsilon_i + u_{it}$$

$$= \beta_i + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \omega_{it}$$

Where,  $\omega_{it} = \varepsilon_i + u_{it}$

The composite error term  $\omega_{it}$  consists of two components,  $\varepsilon_i$ , which is the cross-section, or individual specific, error component, and  $u_{it}$ , which is the combined time series and cross section error component. In ECM, on the other hand, the intercept  $\beta_1$  represents the mean value of all the (cross-sectional) intercepts and the error component  $\varepsilon_i$  represents the (random) deviation of individual intercept from this mean value. However, keep in mind that  $\varepsilon_i$  is not directly observable; it is what is known as an unobservable, or latent, variable.

### 3.2. Result discussion:

Now here we will regress our both model and decide which model is appropriate for our analysis using Hausman test by following steps.

#### Step :1 Fixed effect model:

Table-1 Complied STATA output						
Loan recovery	Coef.	Std. Err.	t	p> t	[95% Conf. Interval]	
<b>disburse</b>	.3970542	.144676	2.74	0.010	.1027087	.6913998
<b>deposit</b>	.1105827	.0377248	2.93	0.006	.0338309	.1873345
<b>Profit</b>	.964993	.5029449	1.92	0.064	-.058256	1.988242
<b>Cons.</b>	65.19372	64.32132	1.01	0.318	-65.66899	196.0564
OverallR <sup>2</sup> = 0.7051			Prob>F= 0.0005			

#### Step 2: Random effect model:

Table-2 Complied STATA output						
Loan recovery	Coef.	Std. Err.	z	p> z	[95% Conf. Interval]	
<b>disburse</b>	.6101155	.1043719	5.85	0.000	.4055504	.8146805
<b>deposit</b>	.0745927	.0294057	2.54	0.011	.0169586	.1322269
<b>Profit</b>	.4445427	.2819582	1.58	0.115	-.1080852	.9971706
<b>Cons.</b>	44.50288	36.46526	1.22	0.222	-26.96772	115.9735
OverallR <sup>2</sup> = 0.7968			Prob>chi <sup>2</sup> ( $\chi^2$ )= 0.0005			

**Step 3: Hausman Test:** This is a statistical hypothesis test which helps us whether we use fixed effect model or random effect model. Here we have two hypotheses,

Null hypotheses ( $H_0$ ): Accept Random effect model.

Alternative hypotheses ( $H_1$ ): Accept Fixed effect model.

Table-3 Complied STATA output				
	Fixed	Random	Difference	S.E.
<b>Disburse</b>	.3970542	.6101155	-.2130612	.1001881
<b>Deposit</b>	.1105827	.0745927	.03599	.0236319
<b>Profit</b>	.964993	.4445427	.5204503	.416477
Chi <sup>2</sup> ( $\chi^2$ )= 0.0015				

The result suggested that p value of Chi<sup>2</sup> ( $\chi^2$ ) is <.05(0.0015) which means we accept the alternative hypotheses, Fixed effect model is appropriate for our analysis.

As mentioned above that fixed effect model are appropriate for our analysis, we will now interpret our analysis. The F value in this model is statistically significant (p<.05) which means

our model is very good and nicely fitted. In this analysis we see dependent variable loan recovery (Y) is positively related with loan disburse ( $X_2$ ), deposit ( $X_3$ ) and profit ( $X_4$ ). So we can write,

$$\hat{Y} = 65.19372_i + .3970542X_{1it} + .1105827X_{2it} + .964993X_{3it}$$

<i>se</i>	(64.32132)	(.144676)	(.0377248)	(.5029449)
<i>t</i>	(1.01)	(2.74)	(2.93)	(1.92)
<i>p</i>	(0.318)	(0.010)	(0.006)	(0.064)

This model tells us the intercept is 65.19372 (table-1). Loan recovery positively related with loan disburse, coefficient is .3970542  $X_{1it}$  which means if disburse increases 1 unite then loan recovery increased by .3970542 unit and p value is .010<.05, so it is statistically significant. The relationship between loan recovery and deposit, 1 unit increase in deposit will increase loan recovery by .1105827 unit and it is also statistically significant because p value is .006(<.05). Finally if profit increase 1 unit then recovery will increase by .964993 unit but p value is .064(<.05), it means result is not statistically significant but it is very close to value of .05. This analysis helps us to tell that Bangladesh Krishi Bank recovered their loan because disburse, deposit and profit are positive. We may explain this result as when loan recovery becomes positive it tells people who take loan from BKB they paid their credit timely. They do so because they use the credit properly. So the purpose of agricultural loan brings fruitful outcomes for both farmers and bankers. It also helps to increase bank deposit because farmers save their income on bank. Bank also makes profit from here. So we may conclude when agricultural credit is helpful to enhance agricultural activities it is automatically improve the economic condition of the farmers and performance of bank.

### Conclusion:

It is very clear people who lived in rural area are largely engaged on agricultural activities. Significant portion of their earnings come from this sector. Agricultural production is very high in Tangail district due to highly productive land and huge number of people engaged on this sector. As a result credit of Bangladesh Krishi Bank (BKB) plays an important role for the development of this sector. In our study we have already seen that the volume of agricultural loan increased significantly over the years. Farmers of our study area are demanded more loan to enhance and improvise agricultural activities to increase output. Earnings of farmers also increase and they repay the loan properly. In this study we have seen loan recovery and disburse are positively related which support our above statement. If we may want to see this more deeply then we notice almost 70% of loan is given to crops sector and recovery from this sector is almost same. It may a main reason that bank gives more priority the crops sector for loan disbursement. Another point is also visualized in this study, Bank deposit increased over the year which may the reason of increase the earning of farmers and our regression model said that the relationship between recovery and deposit are positive and statistically significant. The profit of these nine branches are increased over year and the reason is loan disburse, recovery and deposit shows positive trends. So finally we say it with confident that the credit of Bangladesh Krishi Bank (BKB) has a positive contribution for agricultural development and our study helps us to support this statement strongly. But in this study we have found some drawbacks like variability of interest rate which is quite high, specially for landless and marginal farmers. The government should take policies which help bank to bring more landless and marginal farmers under



agricultural loan. Sometimes it is very difficult for farmer to get loan from bank because of loan-broker and some corrupted officials. To remedy this problems bank authority takes initiatives and also appoint more field supervisor to monitor the progress of loan. It helps to increase the efficiency of loan disbursement and recovery. The numbers of branches also need to be increased specially on periphery area and as a result agricultural sector will be more developed.

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