

# Performance Evaluation of Agricultural Banks in Bangladesh

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## Abstract

Bangladesh has a primarily agrarian economy. Most Bangladeshis earn their living from agriculture. The performance of this sector has a major impact on the overall economic development of the country. For efficient performance of this sector proper credit facilities and adequate support is essential both from government and private sector. In this paper we have analyzed the development and growth of specialized agricultural banks in Bangladesh and the different services and facilities they are providing for the overall improvement of this sector. It is observed that both agricultural banks are able to achieve a steady growth in terms of employees, branches, deposits, loans and advances during the period 2004-2008. Different trend equations and square of correlation coefficient ( $r^2$ ) have been tested for different activities of agricultural banks of Bangladesh. Finally, results are interpreted in this context and suggestions are given for improving the future performance of these banks.

**Keywords:** Agriculture, Deposits, Loans, Poverty alleviation, Micro credit

## 1. Introduction

The characteristics and the evolution of the agricultural sector around the world are diverse and finance is a key issue in the evolution of the agricultural sector. Agriculture is a key sector of the economy in many developing countries. Strengthening this sector requires, amongst others, better accessibility to financial services. Majority of people in developing countries live in rural areas and are involved in agriculture activities. In these countries, agriculture is the pillar of the economy and the other sectors of activity such as industry, commerce, and public and private services largely depend on it. Agriculture first provides for families subsistence needs. Any surplus generated provides cash income to cover other essential needs. The surplus is sold in the market to meet domestic demand for food crops. Cash crops such as cotton, peanuts, coffee, tea, jute, tobacco, vanilla and so on are mainly aimed at export markets. Raising livestock such as poultry, goats, pigs and sheep whether for meat, milk, eggs, leather or as draft animals or for religious or cultural rituals is also a major agricultural activity. Exported agricultural products represent a major source of foreign currency for several countries. Jobs in the public sector and jobs in commerce and other services are also largely dependent on the primary sector. In Mali, for example, the cotton sector contributes significantly to export revenue, employs nearly 3.5 million individuals, and generates considerable income in rural areas which has made possible investment in the physical and social infrastructure. Despite this major contribution from the agricultural sector to the economy, the rural sector in developing countries only has modest means to fulfill its task. Agricultural finance should be integrated as much as possible into an overall development approach based on support for agricultural production, the marketing of agricultural products, improvement in management capacity, protection of the environment and risk management.

The major occupation of the people of Bangladesh is "Krishi". Krishi is a Bengali word which means "Agriculture". About 85% of the population depends directly or indirectly on agriculture. Agriculture is the single largest producing sector of the economy since it comprises about 30% of the country's GDP and employs

around 60% of the total labor force ([http://en.wikipedia.org/wiki/Agriculture\\_in\\_Bangladesh](http://en.wikipedia.org/wiki/Agriculture_in_Bangladesh)). The performance of this sector has an overwhelming impact on major macroeconomic objectives like employment generation, poverty alleviation, human resources development and food security. So the proper development of the country cannot be thought of without the proper development of its agricultural sector. In this respect, the banking system acts as a major contributor for the development of this agricultural sector.

In a developing country like Bangladesh, the banking system, as a whole, plays a vital role in the progress of its economic development. A bank, as a matter of fact, is just like the heart in the economic structure and the capital provided by bank is just like the blood in it. As it is mentioned already that the economy of Bangladesh is mainly dominated by agriculture, that is why if the finance is not provided to the agricultural sector, the growth of the economy will be slowed down. Loan facility provided by the bank works as an incentive to the producer to increase production ([http://www.blurtit.com/q\\_197532.html](http://www.blurtit.com/q_197532.html)). Keeping this in mind, for the purpose of the development of agricultural sector, the Government of Bangladesh has established two specialized banks –namely: **Bangladesh Krishi Bank (BKB)** and **Rajshahi Krishi Unnayan Bank (RAKUB)**. These banks are continuously trying to provide support for the advancement and development of the agricultural sector of the country. First of all, they are promoting savings, mostly from middle and lower middle class of urban and rural people. Secondly these banks promote investment in different sectors of agriculture, industry and trade. They either invest directly or advances loan to the investors. They are continuously helping the disadvantaged people to become self sufficient by providing them micro credit.

## 2. Review of Literature

With respect to the performances of Bangladeshi agricultural banks, foreign and national experts undertook number of studies. Some of the notable ones are: Ahmed (1980), Kahlily (1997), Khalily, Huda and Lalarukh (1997), Chowdhury (2002), Mahmud (2006), Chowdhury and Islam (2007), Jahangir, Shill and Haque (2007).

According to Ahmed (1980) though Bangladesh inherited an agrarian economy, agriculture did not get due importance hitherto. As such the farmers did not find change of their lot, rather the number of landless and marginal farmers increase day by day. 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. These farmers were found to receive 86% of their credit from non institutional sources which includes money lenders, shopkeepers, relatives, friends, well to do rural people, market intermediaries and others. It was guessed that non institutional sources still provide 70% of the credit. In this regard institutional credit facility can be considered. Institutional sources refer to the government, cooperatives, agricultural banks, commercial banks etc. who are entrusted with the responsibility of credit dispensing. Institutional sources provide an increasing trend with the passage of time.

Kahlily (1997) observed that unlike urban credit market, rural credit market is generally repressed. Financial policies for agricultural credit are more subject to distortions. The major policies are: interest rate, loan targeting, refinancing of loans and interest and loan forgiveness program. Policies are formulated by Bangladesh Bank. These policies influence the behavior of agricultural credit in formal financial markets.

According to Khalily, Huda and Lalarukh (1997), credit is necessary for agricultural development vis-à-vis rural economic development. But loan recovery rate is low. This has adverse impact on revolving of loan able fund and viability of rural financial system. Poor performance of lenders in agricultural credit does affect viability of rural financial system. A quick estimate shows that social cost of forgiveness program has been twenty five percent of loan outstanding. On the other hand continued interest of the political lenders in interest and loan forgiveness program also affects expected recovery behavior of the borrowers. Burden of social cost for agricultural or rural credit cannot be fully attributed to crop loans as it constitutes only forty percent of the total agricultural credit. Non crop loans are likely to be less risky. Therefore, the problem of high social cost for agricultural credit can perhaps be linked to institutional behavior.

Chowdhury (2002) observed that banking industry of Bangladesh is a mixed one comprising nationalized, specialized, private and foreign commercial banks. Many efforts have been made to explain the performance of these banks. Understanding the performance of banks requires knowledge about profitability and the relationship between variables like market size, bank's risk and bank's market size with profitability.

Mahmud (2006) observed that the rural poor generally have low income to sustain their livelihood. They do not have the capacity to start any income generating activities due to lack of financial capital. They also have very limited access to the formal financial institutions because of the inability to fulfill formal collateral requirement. Thus in order to widen rural poor access to finance, micro credit program has been launched which require no collateral to obtain funds.

Chowdhury and Islam (2007) stated that deposits and loan and advances of Specialized Banks (SBs) are more sensitive to interest rate changes than those of Nationalized Commercial Banks (NCBs). So SBs should not make abrupt change in lending rate and deposit rate by following the NCBs. If NCBs change their lending rate or deposit rates, their deposits and loan and advances will be affected less than those of SBs. However, SBs offer higher deposit rate and charge higher lending rates than NCBs. That is why the interest rate spared of SBs was higher than that of NCBs.

Jahangir, Shill and Haque (2007) observed that the traditional measure of profitability through stockholder's equity is quite different in banking industry from any other sector of business, where loan to deposit ratio works as a very good indicator of bank's profitability as it depicts the status of asset liability management of banks. But bank's risk is not only associated with asset liability management, but also related to growth opportunities. Smooth growth measures higher future returns to holders and there lies profitability which means not only current profits, but future returns as well.

A publication entitled "World Agriculture: Horizon 2015/2030", the Food and Agricultural Organization (FAO) mentions that: For many of the currently more than 1.1 billion people that are living in extreme poverty, economic growth based primarily on agriculture and on non-farm rural activities. Agricultural finance is essential to improve their livelihoods. Promoting agricultural growth in rural areas and giving rural people better access to land, water, credit, health and education, is essential to alleviate poverty and hunger. Agriculture has specific features distinguishing it from other commercial activities and to serve an agricultural clientele better, microfinance institutions must adapt their practices and deliver credit products designed specifically for this sector.

Agricultural finance must not be a factor that limits agricultural development (Desjardins Development International, September 2005). While access to sources of financing at the right time is a cornerstone for building better living conditions for farmers by ensuring better profitability for their operations, it is not always the limiting factor. The supply of viable financing should not exceed other essential functions supporting development of this sector, all of which rely on secure access to land and water resources. The other functions include organization of marketing efforts, techniques enabling suitable, stable and sustainable production levels and finally access to risk mitigation mechanisms. The higher the level of development of these other functions, the more that financing may be sustained in a developed and long-term manner. Therefore it is necessary before deploying the delivery of agricultural financial services, to understand the level to which the different systems of agricultural production in the zone served are developed.

A significant limitation for the growth of the agriculture sector in Bangladesh is the lack of cultivable land (<http://www.adb.org/gender/practices/agriculture/ban004.asp>). As a result, increased growth of agricultural sector must rely upon diversification of agricultural production to higher value crops, intensification of production around homestead areas, provision of services to the agricultural sector (upstream links), value addition through further processing, storage and transport of agricultural commodities (downstream links). Though women participate actively in different sub-sectors in agriculture, but their contributions often go unrecognized. The agribusiness development project has significant potential in reducing poverty among women by increasing their access to newer employment opportunities in upstream and downstream agribusiness enterprise and services; developing women as contributors to economic growth and supporting women's empowerment in decision making and public life.

### **3. Objectives of the Study**

The specific objectives of the study are as follows:

- 1) To appraise the principal activities of Agricultural Banks of Bangladesh.
- 2) To appraise the performance of the Agricultural Banks of Bangladesh.

### **4. Scope and Methodology of the Study**

The present study has been carried out to evaluate the performance of agricultural banks in Bangladesh. The selected banks are: Bangladesh Krishi Bank (BKB) and Rajshahi Krishi Unnayan Bank (RAKUB). This study has been based mainly on the data from secondary sources. The relevant data and information were collected from annual reports of these banks, Bangladesh Bank, Securities and Exchange Commission and websites of relevant agricultural banks in Bangladesh. Relevant articles and literature in this context have also been reviewed. In this article we have analyzed the different data of agricultural banks in Bangladesh during the period 2004-2008. For evaluating the agricultural bank's performance, these data has been analyzed through the various

statistical measures like growth percentage, trend equation, square of correlation coefficient ( $r^2$ ), correlation matrix etc.

## **5. An Overview of the Agricultural Banks of Bangladesh**

### *5.1 Bangladesh Krishi Bank (BKB)*

Bangladesh Krishi Bank (BKB) has been established under the Bangladesh Krishi Bank order 1973 (President's Order No 27 of 1973). BKB is a banking company under the Banking Company Act-1991. Its Head Office is located at Krishi Bank Bhaban, 83-85 Motijheel Commercial Area, Dhaka-1000, Bangladesh. The primary objective of BKB is to provide credit facilities to the farmers for the development of agriculture and entrepreneurs engaged in development of agro-based and cottage industries.

BKB is guided in accordance with the policies and principles of the Government of the Peoples Republic of Bangladesh. It has an authorized capital of Tk.15, 000 million (Taka fifteen thousand million) only and paid up capital of Tk.9, 000 million (Taka nine thousand million) only which is fully paid by the government. The Bank started commercial functioning since 1977 to generate more loan able fund from the idle rural and urban savings and invest them for the betterment of our economy.

Bangladesh Krishi Bank operates its function through its 952 branches (except Rajshahi Division) of which 822 are rural and 130 are urban. It has 15 foreign exchange (Authorized dealer) branches. In the field level the Bank has 8 Divisional, 21 Chief Regional and 30 Regional offices for close supervision of the branch activities. For smooth operation, as part of internal control and compliance system, the Bank has 6 field level audit offices of which 5 at divisional and 51 at regional levels. In the Head Office the Bank has 4 divisions headed by General Managers and 28 departments including Local Principal Office and Training Institute headed by Deputy General Managers.

BKB gives importance to accumulation of rural small savings through its branches. It offers different deposit banking facilities like Current Deposit Account, Short Term Deposit Account, Savings Bank Account, Fixed Deposit Account and other Time Deposits. The Bank provides loans and advances to different sectors, namely crop and fisheries, agro based industry (which includes large and medium industry, small and cottage industry), poverty alleviation, retail business and services like transportation, communication, insurance, working capital loan etc.

BKB finances production of all the summer and winter crops, horticulture and nursery etc. The Bank attaches importance to use scientific method and modern technology in fish cultivation. It extends adequate credit support for excavation and re-excavation of ponds, round the year cultivation of species, which have rapid growth, cultivation of sweet water prawn and other fishes. The Bank makes use of expertise of the concerned government agencies for bringing more ponds/water bodies under cultivation and increasing productivity. As an agricultural country different types of crops and fruits are produced here. The Bank also pays due importance to setting up agro-industries for preservation, processing and marketing of agricultural produces having backward linkage with basic sub-sectors of crop, fishery, livestock and forestation. Manufacturing and marketing of agricultural implements are also encouraged. Moreover, there is enough scope for export of these items through processing mechanism and value addition. Considering the needs of the target groups since late seventy's BKB has been implementing a series of Micro-Credit programs out of which 10 programs have recently been completed and 31 programs are in operation at present.

### *5.2 Rajshahi Krishi Unnayan Bank (RAKUB)*

Rajshahi Krishi Unnayan Bank (RAKUB) was established by the President's Ordinance No. 58 of 1986 with the aim of providing institutional agricultural credit for optimum utilization of agricultural potentials of Rajshahi Division. Taking over the branches and offices along with assets and liabilities of the Bangladesh Krishi Bank within Rajshahi division, the bank started functioning on 15 March 1987. As the largest development partner in the northwest region, RAKUB aims at overall development of farmers and all the sectors and sub-sectors of agriculture in this region. Besides catering to agricultural credit, the bank performs ancillary functions as financing agri-business and agro-based industries and poverty alleviation programs. Authorized capital of the bank amounts to Tk.1, 800 million (taka one thousand eight hundred million) only. At present Paid-up capital amounts to Tk.1, 800 million (taka one thousand eight hundred million) only and reserve amounts to Tk.208 million (taka two hundred eight million) only.

The head office is stationed at divisional headquarter in the city of Rajshahi. The bank comprises 357 branches including one in Dhaka. Eighteen zonal offices stationed in district headquarters control branches under them. The General Manager's office at Rangpur oversees activities of 12 zones of greater Rangpur, Dinajpur and Bogra

districts. There are 18 independent regional audit offices for conducting regular audit in branches and zonal offices as on March 31, 2009.

Like BKB, RAKUB also gives importance to accumulation of rural small savings through its branches. RAKUB renders all sorts of deposit banking services to its over one million valued customers. The Bank operates deposit accounts like Savings Bank Accounts, Current Deposit Accounts, Short Term Deposit Accounts and Fixed Deposit Accounts. The poverty-stricken area of north-west Bangladesh is characterized by comparatively lower rate of savings, inadequate capital accumulation and slim employment opportunities. The existing collateral-based banking system is also of little use in respect of extending support to the millions of landless people. To address the problem, the Bank has been financing collateral-free micro-credit for income and employment generation through its poverty alleviation credit programs. The Bank finances for production of all the summer and winter crops, horticulture & nursery etc. It extends credit facilities for systematic and commercial livestock farming which includes dairy, beef-fattening, poultry, raising and setting up of hatcheries which in turn is expected to increase production of milk, meat and eggs, the main source of protein. In today's technology-based farming of high yielding and high-value crops, mechanization of cultivation, irrigation and pest-control is indispensable. To cope with the situation, the Bank also provides financing for power tillers, tractors, tube wells, power-pumps and fertilizer and pesticide application devices. Agro-industries for import sub situation are specially encouraged by offering moderate terms of financing. These agro based industries are – poultry farm, dairy farm, food processing plant, fish freezing/processing industries, leather process and leather based products item, vegetables etc.

## **6. Performance Evaluation of Agricultural Banks in Bangladesh**

In this section we tried to evaluate the performance of Agricultural Banks of Bangladesh.

### *6.1 Growth of Branches of Agricultural Banks in Bangladesh*

Table: 1 shows the growth of branches. The growth of branches was the highest in 2007 for RAKUB, which was 1.96% but in the year 2008, the bank did not open up new branches for which the growth is zero in that year. BKB had the highest number of branches of 952 in the year 2008. During 2004 to 2008 every year number of branches of BKB had increased from the previous year.

### *6.2 Growth of Employees of Agricultural Banks in Bangladesh*

Table: 2 shows the growth of employees. BKB's manpower strength was 10576 and for RAKUB it was 3762 as on December 31, 2008. Both the banks had faced a declining growth rate during 2005 to 2007, but the banks had regained their manpower at the end of 2008, which indicates a growth rate of 3.32% for BKB and 9.33% for RAKUB.

### *6.3 Growth of Deposits of Agricultural Banks in Bangladesh*

Table: 3 shows the growth of deposits. During 2005 to 2008 every year deposit of BKB and RAKUB had increased from the previous year. The highest growth of deposits of BKB was observed in 2008 and the highest growth of deposits of RAKUB was observed in 2006.

### *6.4 Growth of Loans and Advances of Agricultural Banks in Bangladesh*

Table: 4 shows the growth of loans and advances. It is observed from the table that during 2004 to 2008 every year loans and advances of BKB and RAKUB had increased from the previous year except for RAKUB in 2008. For BKB the highest growth was observed in 2006 and the highest growth of RAKUB was observed in 2004.

### *6.5 Growth of Loans Allocation (Crop and Fisheries) by Agricultural Banks in Bangladesh*

Table: 5 shows the growth of loans allocation for crop and fisheries sector. Loans allocation for crop and fisheries by BKB was increased from the previous year during 2004 to 2006, but it was decreased from the previous year during 2006 to 2008. It has also been observed that RAKUB had increased the loans allocation in this sector every year from the previous year during 2004 to 2008.

### *6.6 Growth of Loans Allocation (Agro Based Industry) by Agricultural Banks in Bangladesh*

Table: 6 shows the growth of loans allocation for agro based industry. Both Banks had allocated loans into two sectors, Large and Medium Industry and Small and Cottage Industry. BKB had sanctioned the maximum amount of loans for large and medium industry in the year 2008. However, BKB had reduced the amount of loans disbursement for small and cottage industry the year 2005, but in the subsequent years the bank had increased the amount of loans for this industry, On the other hand, RAKUB did not distribute any loan for large and

medium industry during 2004 to 2006. RAKUB had started loan sanctioning in this industry from 2007. It had distributed the maximum amount of loans for small and cottage industry in the year 2006.

#### *6.7 Growth of Loans Allocation (Poverty Alleviation) by Agricultural Banks in Bangladesh*

Table: 7 shows the growth of loans allocation for poverty alleviation. During 2005 to 2008 the amount of loans disbursement by BKB for poverty alleviation had been increased from the previous year. BKB had distributed the maximum amount of loans of Tk.3, 200 million in the year 2004. On the other hand, the amount of loans for poverty alleviation as distributed by RAKUB had a sharp fall in the year 2007 (with a declining growth rate of 40.17%). However, in the next year, the bank had increased the amount of loans slightly, which is reflected by the positive growth rate of 1.24% than the previous year.

#### *6.8 Growth of Loans Allocation (Retail, Services and Others) by Agricultural Banks in Bangladesh*

Table: 8 shows the growth of loans allocation for retail, services and others sector. During 2005 to 2008 the loans disbursement by BKB in retail, services and others sectors had been increased from the previous year. The highest disbursement of loans by BKB was observed in 2004. The loan allocation of RAKUB had shown a fluctuating trend during 2004 to 2008. The highest loan allocation in retail and service sector by RAKUB was observed in 2006, but in the next two years it showed a negative trend.

#### *6.9 Percentage of Loans Allocated In Different Sectors by Agricultural Banks in Bangladesh*

Table: 9 shows the percentage of loans allocated in different sectors. More than 60% of loans were distributed for crop and fisheries sector by BKB during 2004 to 2008. The bank had distributed about 1% loan in small and cottage industry, more than 10% loans in large and medium industry, about 7% loans in retail and services and more than 3% loans each for poverty alleviation and for other purposes during 2004 to 2008. On the other hand, RAKUB had distributed more than 61% loans for crop and fisheries, more than 8% loans for small and cottage industry, about 10% loans for poverty alleviation and more than 5% loans each for retail and services and for other purposes during 2004 to 2008. No loans were distributed by RAKUB during 2004 to 2006 for large and medium industry.

#### *6.10 Disbursement and Recovery of Agricultural Loan*

Table: 10 shows disbursement and recovery of agricultural loan. BKB had increased the disbursement of agricultural loans during 2004 to 2008 except the year 2007. In 2007, loan disbursement had reduced by 4.55% than the previous year. Though their loan recovery was poor in the year 2005, but in the year 2006 and 2007 the recovery rate was increased. However, in the year 2008 again there was a fall in the loan recovery which is reflected by a decrease in the recovery rate by 5.09%. RAKUB had distributed the maximum amount of fund as agricultural loans in the year 2005. However, there is no consistent pattern for loan recovered by RAKUB. In the year 2005 and 2008, the bank had improved their loan recovery but in 2006 and 2007 their loan recovery rate had declined.

#### *6.11 Disbursement and Recovery of Agro Based Industrial Loan*

Table: 11 shows disbursement and recovery of agro based industrial loans. During 2004 to 2007 every year loans disbursement of agro based industrial loans by BKB had increased from the previous year. But the bank had decreased the amount of loans disbursement from the previous year in 2008. The highest disbursement was made in 2007. During 2005 to 2007 loans recovery of BKB had increased from the previous year, but in 2005 and 2008 loans recovery had decreased from the previous year. The amount of loans disbursement and recovery of RAKUB had increased from the previous year during 2005 to 2007 but decreased from the previous year in 2008.

#### *6.12 Growth of Investment of Agricultural Banks in Bangladesh*

Table: 12 shows the growth of investment. The total investment of BKB had increased from the previous year in 2005, but decreased from the previous year in 2006 and 2008. RAKUB had made the highest amount of investment in the year 2006. In the year 2007, their amount of investment was reduced by 30.40% and remains unchanged in the following year.

#### *6.13 Deposit Interest Rate of Agricultural Banks in Bangladesh*

Table: 13 shows deposit interest rate. To attract deposit, BKB and RAKUB have increased the deposit interest rate gradually through out the years 2004 to 2008. During 2004 to 2008, deposit interest rate offered by BKB was more than 5%. RAKUB offered about 4% interest in 2004 and 2005. But interest rate offered by RAKUB was increased to more than 6% in 2007 and 2008.

#### 6.14 Loan Interest Rate of Agricultural Banks in Bangladesh

Table: 14 shows loan interest rate. It is observed from the table that during 2004 to 2008 BKB had charged about 9% interest rate on loan. RAKUB had charged 10.23% interest in 2004, but had charged about 9% interest in 2007 and 2008.

#### 6.15 Growth of Net Profit of Agricultural Banks in Bangladesh

Table 15 shows the growth rate of total net profit earned by BKB and RAKUB during the years 2004 to 2008. BKB had earned the highest amount of net profit in the year 2006 with a growth rate of 49.32% from the previous year. However, no consistent pattern is shown in the net profit earned by BKB. Net profit of BKB had decreased from the previous year in 2005 and 2007. On the other hand, the amount of net profit earned by RAKUB had gradually increased throughout the years 2006 to 2008. The growth rate of net profit earned by RAKUB is more than 8% during the years 2006 to 2008.

#### 6.16 Trend Equations of Agricultural Banks in Bangladesh

Table: 16 shows the summary of trend equations and  $r^2$  of branch expansion of agricultural banks in Bangladesh. It is reflected from the table that the trend equations of both the banks are positive and goodness of fit of all equations are very high, i.e. more than 0.94.

Table: 17 shows the summary of trend equations and  $r^2$  of employees of agricultural banks in Bangladesh. It is reflected from the table that the trend equation of Rajshahi Krishi Unnayan Bank is positive but Bangladesh Krishi Bank is negative. The goodness of fit of both equations is less than 0.50.

Table: 18 shows the summary of trend equations and  $r^2$  of deposits of agricultural banks in Bangladesh. It is reflected from the table that the trend equations of both the banks are positive and goodness of fit of all the equations are high, i.e. more than 0.80.

Table: 19 shows the summary of trend equations and  $r^2$  of loans and advances of agricultural banks in Bangladesh. It is reflected from the table that the trend equations of both the banks are positive. From the goodness of fit it is reflected that both the equations are well fitted.

Table: 20 shows the summary of trend equations and  $r^2$  of loan allocation in crop and fisheries sector by agricultural banks in Bangladesh. It is reflected from the table that the trend equations of both the banks are positive. The goodness of fit of RAKUB's trend equation is very high i.e., more than 0.90.

Table: 21 shows the summary of trend equations and  $r^2$  of loan allocation in agro based industry sector by agricultural banks in Bangladesh. It is reflected from the table that the trend equations of both the banks are positive. The goodness of fit of all trend equations are high i.e. more than 0.80. It indicates both the equations are well fitted.

Table: 22 shows the summary of trend equations and  $r^2$  of loan allocation for poverty alleviation by agricultural banks in Bangladesh. It is reflected from the table that the trend equation of both the banks are negative. The goodness of fit of all the trend equations is less than 0.50.

Table: 23 shows the summary of trend equations and  $r^2$  of loan allocation in retail and others sector by agricultural banks in Bangladesh. It is reflected from the table that the trend equation of Rajshahi Krishi Unnayan Bank is positive but Bangladesh Krishi Bank is negative. The goodness of fit of both equations is moderate. In case of BKB, it is less than 0.50.

Table: 24 shows the summary of trend equations and  $r^2$  of deposit interest rate of agricultural banks in Bangladesh. It is reflected from the table that the trend equations of both the banks are positive. The goodness of fit of both the equations are high i.e. more than 0.60.

#### 6.17 Inter parameter Correlation Matrix

Table: 25 shows inter parameter correlation matrix between different parameters of all agricultural banks. The chosen parameters are: net profit, deposits, loans, employees and branches of all agricultural banks. From the correlation matrix we have observed the followings:

- Net profit has strong correlation with deposit, loans, branches and employees.
- Deposit has strong correlation with net profit, loans, branches and employees.
- Loans have strong correlation with deposit, net profit, branches and employees.
- Branches have strong correlation with net profit, loans, deposits and employees.
- Employees have strong correlation with deposit, loan and branches.

## 7. Findings and Conclusion

The journey of agricultural banks has started in Bangladesh in the year 1973. After commencement the agricultural banks play a vital role in the economic development of the country. It is reflected from the analysis that almost every year both banks have opened new branches. BKB had the highest number of branches in the year 2008, which was 952. However, both banks should open up more new branches for the overall development of agricultural sector of Bangladesh.

The agricultural banks have created employment opportunities for more than twelve thousand people in Bangladesh. However, from the analysis we have found that both the banks lost their employees during the year 2005 to 2008 but they have regained their manpower at the end of 2008. From the trend analysis we have observed that ( $r^2$ ) of employees for both the banks are less than 0.50. Even worse, BKB has negative trend equation, which means their employee turnover will continue in the future. These indicate that the prospect of employees in agricultural banks is very poor. The banks should take remedial measures to reduce their employee turnover.

From the analysis it is reflected that RAKUB had experienced a negative growth for deposits in the year 2005, but in subsequent year they have improved their deposit base. The deposit base of BKB also improved every year. The trend value of deposits is positive for both banks. Square of correlation coefficient ( $r^2$ ) is also more than 0.80. It indicates the banks will be able to attract more deposit in the future years. It is a positive sign that both banks have increased the deposit interest rate during the period 2005 to 2008. From the trend analysis it is expected that the banks will continue to increase the deposit interest rate in the future as well. It will encourage small savers to save more and allocate their saving in the overall improvement of the country.

We have found that RAKUB has reduced their loan disbursement gradually throughout the years. On the other hand BKB has disbursed the maximum amount of loan in the year 2008. From the trend analysis we have found that the trend values for loan of both the banks are positive which indicates that the banks will increase the amount of loan disbursement in future. The loan interest rate also shows a declining pattern which will encourage small and medium entrepreneurs to take loans from these banks. However, both the banks should focus more on this issue regarding reducing the loan interest rate even more.

It is observed that RAKUB does not sanction adequate loan in large and medium agro based industry. So, RAKUB should give attention for large and medium industry more and may allocate more loans in this sector. At the same time both banks should focus more on small and cottage industry. This is an important sector which helps many landless and unemployed people to become self dependant and thereby earn their livelihood. So, adequate loan disbursement with easy formalities by the banks in this sector is a must. However, from the trend analysis, by testing the trend values and ( $r^2$ ) we are quite optimistic that in the future the banks will give proper attention in both the sector by allocating more loans for agro based industry.

Both the banks have gradually reduced the loan for poverty alleviation. From the trend value and square of correlation ( $r^2$ ) it has reflected. However, in a country like Bangladesh, where about 55% population lives under the poverty line, reducing loan for poverty alleviation is even more harmful. The banks should make easy formalities for loan disbursement for this purpose; so that poor people can improve their financial condition by taking loan.

BKB is allocating less than 1% loan in small and cottage industry, which is alarming. Both banks should focus more in this sector. They should also focus more attention for poverty alleviation without which it is impossible to think about the proper development of the economy.

Both banks should concentrate more on loan recovery. It is reflected from the analysis that there is no consistent pattern for agricultural loan disbursement and recovery. However, the scenario is relatively better for industrial loan disbursement and recovery. It is recommended that both the banks should disburse loan for easy condition and should set a target for loan recovery in both the sectors. It is always better if the banks can recover loan at a consistent pattern in every year. Otherwise the banks' profitability can be hampered.

We are quite optimistic that if the given suggestions of this paper are implemented then the agricultural banks may be able to overcome its present problems and may contribute in the rapid development of the agricultural sector of Bangladesh.

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Table 1. Growth of Branches of Agricultural Banks in Bangladesh

Sl	Name of Banks	Number of Branches				
		2004	2005	2006	2007	2008
1.	Bangladesh Krishi Bank	929	938	942	948	952
	Growth		0.97%	0.43%	0.64%	0.42%
2.	Rajshahi Krishi Unnayan Bank	349	353	357	364	364
	Growth		1.14%	1.13%	1.96%	0%

Source: Compiled from different issues of Annual Reports of Bangladesh Krishi Bank and Rajshahi Krishi Unnayan Bank

Table 2. Growth of Employees of Agricultural Banks in Bangladesh

Sl	Name of Banks	Number of Employees				
		2004	2005	2006	2007	2008
1.	Bangladesh Krishi Bank	10779	10617	10454	10236	10576
	Growth		-1.50%	-1.54%	-2.08%	3.32%
2.	Rajshahi Krishi Unnayan Bank	3577	3524	3446	3441	3762
	Growth		-1.48%	-2.21%	-0.15%	9.33%

Source: Compiled from different issues of Annual Reports of Bangladesh Krishi Bank and Rajshahi Krishi Unnayan Bank

Table 3. Growth of Deposits of Agricultural Banks in Bangladesh

Sl	Name of Banks	Total Deposits (In Million BDT)				
		2004	2005	2006	2007	2008
1.	Bangladesh Krishi Bank	49700	55960	60152	66307	79889
	Growth		12.60%	7.49%	10.23%	20.48%
2.	Rajshahi Krishi Unnayan Bank	10820	10578	12965	13958	14340
	Growth		-2.24%	22.56%	7.66%	2.74%

Source: Compiled from different issues of Annual Reports of Bangladesh Krishi Bank and Rajshahi Krishi Unnayan Bank (Note: US \$ 1=BDT 70.95)

Table 4. Growth of Total Loans and Advances of Agricultural Banks in Bangladesh

Sl	Name of Banks	Total Loans and Advances (In Million BDT)				
		2004	2005	2006	2007	2008
1.	Bangladesh Krishi Bank	59304	61407	70056	73286	79186
	Growth		3.55%	14.08%	4.61%	8.05%
2.	Rajshahi Krishi Unnayan Bank	18327	21428	24713	25906	25650
	Growth		16.92%	15.33%	4.83%	-0.98%

Source: Compiled from different issues of Annual Reports of Bangladesh Krishi Bank and Rajshahi Krishi Unnayan Bank (Note: US \$ 1=BDT 70.95)

Table 5. Sector-wise Loan Allocation: Loan Allocation (Crop and Fisheries)

Sl	Name of Banks	Loan Disbursement(Crop and Fisheries) (In Million BDT)				
		2004	2005	2006	2007	2008
1.	Bangladesh Krishi Bank					
	Crop & Fisheries	36933	45393	50799	50742	44345
	Growth		22.91%	11.91%	-0.11%	-12.61%
2.	Rajshahi Krishi Unnayan Bank					
	Crop & Fisheries	12018	13926	15378	15911	16340
	Growth		15.87%	10.43%	3.47%	2.70%

Source: Compiled from different issues of Annual Reports of Bangladesh Krishi Bank and Rajshahi Krishi Unnayan Bank

Note: US \$ 1=BDT 70.95

Table 6. Sector-wise Loan Allocation: Loan Allocation (Agro Based Industry)

Sl	Name of Banks	Loan Disbursement (Agro Based Industry) (In Million BDT)				
		2004	2005	2006	2007	2008
1.	Bangladesh Krishi Bank					
	Large & medium Industry	6095	6591	8678	9844	10653
	Growth		8.14%	31.66%	13.44%	8.22%
	Small & Cottage Industry	463	384	400	401	404
	Growth		-17.06%	4.17%	0.25%	0.75%
2.	Rajshahi Krishi Unnayan Bank					
	Large & medium Industry	0	0	0	1293	3750
	Growth	-	-	-	-	190%
	Small & Cottage Industry	2129	2407	2773	2553	n/a
	Growth		13.06%	15.21%	-7.93%	n/a

Source: Compiled from different issues of Annual Reports of Bangladesh Krishi Bank and Rajshahi Krishi Unnayan Bank (Note: US \$ 1=BDT 70.95)

Table 7. Sector-wise Loan Allocation: Loan Allocation (Poverty Alleviation)

Sl	Name of Banks	Loan Disbursement (Poverty Alleviation) (In Million BDT)				
		2004	2005	2006	2007	2008
1.	Bangladesh Krishi Bank					
	Poverty Alleviation	3200	2130	2207	2410	2650
	Growth		-33.44%	3.62%	9.20%	9.96%
2.	Rajshahi Krishi Unnayan Bank					
	Poverty Alleviation	2085	2748	2542	1521	1540
	Growth		31.79%	-7.50%	-40.17%	1.25%

Source: Compiled from different issues of Annual Reports of Bangladesh Krishi Bank and Rajshahi Krishi Unnayan Bank (Note: US \$ 1=BDT 70.95)

Table 8. Sector-wise Loan Allocation: Loan Allocation (Retail, Services and Others)

Sl	Name of Banks	Loan Disbursement ( Retail, Services & Others)(In Million BDT)				
		2004	2005	2006	2007	2008
1.	Bangladesh Krishi Bank					
	Retail & Services	5956	4366	5220	5301	5715
	Growth		-26.69%	19.56%	1.55%	7.81%
	Others	6657	2543	2751	4588	4419
	Growth		-61.80%	8.18%	66.77%	-3.68%
2.	Rajshahi Krishi Unnayan Bank					
	Retail & Services	1143	1319	2816	1396	1385
	Growth		15.39%	113.49%	-50.43%	-0.78%
	Others	952	1028	1204	3232	2635
	Growth		7.98%	17.12%	168.44%	-18.47%

Source: Compiled from different issues of Annual Reports of Bangladesh Krishi Bank and Rajshahi Krishi Unnayan Bank (Note: US \$ 1=BDT 70.95)

Table 9. Percentage of Loan Disbursement in Different Sector

Sl	Name of Banks	Percentage of Loan Disbursement				
		2004	2005	2006	2007	2008
1.	Bangladesh Krishi Bank					
	Crop & Fisheries	62.38	73.92	72.51	69.24	69.89
	Large & medium Industry	10.28	10.73	12.96	13.43	13.45
	Small & Cottage Industry	0.78	0.63	0.57	0.55	0.51
	Retail & services	10.04	7.11	7.45	7.23	7.22
	Poverty Alleviation	5.40	3.47	3.15	3.29	3.35
	Others	11.21	4.14	3.93	6.26	5.58
	Total	100	100	100	100	100
2.	Rajshahi Krishi Unnayan Bank					
	Crop & Fisheries	65.58	64.99	62.23	61.42	63.71
	Large & medium Industry	-	-	-	4.99%	14.62
	Small & Cottage Industry	11.62	11.23	11.22	9.85%	8.64%
	Retail & services	6.24	6.17	11.39	5.39	5.40
	Poverty Alleviation	11.38	12.82	10.29	5.87	6
	Others	5.19	4.79	4.87	12.48	10.27
	Total	100	100	100	100	100

Source: Compiled from different issues of Annual Reports of Bangladesh Krishi Bank and Rajshahi Krishi Unnayan Bank

Table 10. Disbursement and Recovery of Agricultural Loan

Sl.	Name of Banks	Agricultural Loan Disbursement and Recovery (In Million BDT)				
		2004	2005	2006	2007	2008
1.	Bangladesh Krishi Bank					
	Loan Disbursement	12605	12668	17600	16799	19998
	Growth		0.50%	38.93%	-4.55%	19.04%
	Loan recovery	13073	8913	14548	17873	16962
	Growth		-31.82%	63.22%	22.86%	-5.09%
2.	Rajshahi Krishi Unnayan Bank					
	Loan Disbursement	4273	5332	4462	4644	4205
	Growth		24.78%	-16.32%	4.08%	-9.45%
	Loan recovery	4071	5106	4153	3954	4105
	Growth		25.42%	-18.66%	-4.79%	3.82%

Source: Compiled from different issues of Annual Reports of Bangladesh Krishi Bank and Rajshahi Krishi Unnayan Bank

Note: US \$ 1=BDT 70.95

Table 11. Disbursement and Recovery of Agro Based Industrial Loan

Sl	Name of Banks	Agro Based Industrial Loan Disbursement and Recovery (In Million BDT)				
		2004	2005	2006	2007	2008
1.	Bangladesh Krishi Bank					
	Loan Disbursement	3883	3988	5511	7244	5487
	Growth		2.70%	38.18%	31.45%	-24.25%
	Loan recovery	3576	3156	4679	6771	4732
	Growth		-11.74%	48.26%	44.71%	-30.11%
2.	Rajshahi Krishi Unnayan Bank					
	Loan Disbursement	709	1307	1724	2129	1490
	Growth		84.34%	31.91%	23.49%	-30.01%
	Loan recovery	470	684	997	2504	1670
	Growth		45.53%	45.76%	151.15%	-33.31%

Source: Compiled from different issues of Annual Reports of Bangladesh Krishi Bank and Rajshahi Krishi Unnayan Bank

Note: US \$ 1=BDT 70.95

Table 12. Investments of Agricultural Banks in Bangladesh:

Sl	Name of Banks	Total Investments (In Million BDT)				
		2004	2005	2006	2007	2008
1.	Bangladesh Krishi Bank	1688	1719	1608	1608	1492
	Growth		1.84%	-6.46%	0%	-7.21%
2.	Rajshahi Krishi Unnayan Bank	3437	3450	6035	4200	4200
	Growth		0.38%	74.93%	-30.40%	0

Source: Compiled from different issues of Annual Reports of Bangladesh Krishi Bank and Rajshahi Krishi Unnayan Bank

Note: US \$ 1=BDT 70.95

Table 13. Deposit Interest rate of Agricultural Banks in Bangladesh:

Sl	Name of Banks	Percentage of Interest on Deposits				
		2004	2005	2006	2007	2008
1.	Bangladesh Krishi Bank	5.7	5.14	5.41	6.20	6.74
2.	Rajshahi Krishi Unnayan Bank	4.87	4.17	5.09	6.78	6.70

Source: Compiled from different issues of Annual Reports of Bangladesh Krishi Bank and Rajshahi Krishi Unnayan Bank

Table 14. Loan Interest rate of Agricultural Banks in Bangladesh:

Sl	Name of Banks	Percentage of Interest on Loans				
		2004	2005	2006	2007	2008
1.	Bangladesh Krishi Bank	8.72	8.55	8.50	8.60	8.80
2.	Rajshahi Krishi Unnayan Bank	10.23	8.94	8.56	9.09	9.04

Source: Compiled from different issues of Annual Reports of Bangladesh Krishi Bank and Rajshahi Krishi Unnayan Bank

Table 15. Growth of Net Profits of Agricultural Banks in Bangladesh:

Sl	Name of Banks	Total Net Profit (In Million BDT)				
		2004	2005	2006	2007	2008
1.	Bangladesh Krishi Bank	4198	3923	5858	4731	5567
	Growth		-6.55%	49.32%	-19.23%	17.67%
2.	Rajshahi Krishi Unnayan Bank	1756	1603	1736	1939	2150
	Growth		-8.71%	8.29%	11.69%	10.88%

Source: Compiled from different issues of Annual Reports of Bangladesh Krishi Bank and Rajshahi Krishi Unnayan Bank

Note: US \$ 1=BDT 70.95

Table 16. Trend Equations and  $r^2$  of Branches

Sl	Name of Banks	$Y_c = a + bx$	$r^2$
1.	Bangladesh Krishi Bank	$941.8 + 5.6x$	0.977556
2.	Rajshahi Krishi Unnayan Bank	$357.4 + 4.1x$	0.948646

Table 17. Trend Equations and  $r^2$  of Employees

Sl	Name of Banks	$Y_c = a + bx$	$r^2$
1	Bangladesh Krishi Bank	$10532.4 - 78.7x$	0.377965
2.	Rajshahi Krishi Unnayan Bank	$3550 + 28.7x$	0.119296

Table 18. Trend Equations and  $r^2$  of Deposits

Sl	Name of Banks	$Y_c = a + bx$	$r^2$
1.	Bangladesh Krishi Bank	$62401.6 + 7072.5x$	0.945657
2.	Rajshahi Krishi Unnayan Bank	$12532.2 + 1042x$	0.887143

Table 19. Trend Equations and  $r^2$  of Loans and Advances

Sl	Name of Banks	$Y_c = a + bx$	$r^2$
1	Bangladesh Krishi Bank	$68647.8 + 5164.3x$	0.972345
2.	Rajshahi Krishi Unnayan Bank	$23204.8 + 1912.4x$	0.860533

Table 20. Trend Equations and  $r^2$  of Loan Allocation (Crop and Fisheries)

Sl	Name of Banks	$Y_c = a + bx$	$r^2$
1	Bangladesh Krishi Bank	$45642.4 + 2017.3x$	0.312568
2.	Rajshahi Krishi Unnayan Bank	$14714.6 + 1062.9x$	0.910584

Table 21. Trend Equations and  $r^2$  of Loan Allocation (Agro Based Industry)

Sl	Name of Banks	$Y_c = a + bx$	$r^2$
1.	Bangladesh Krishi Bank	$8782.6 + 1226.8x$	0.963839
2.	Rajshahi Krishi Unnayan Bank	$2981 + 468.1x$	0.898675

Table 22. Trend Equations and r2 of Loan Allocation (Poverty Alleviation)

Sl	Name of Banks	Yc= a+bx	r <sup>2</sup>
1.	Bangladesh Krishi Bank	2519.4- 82x	0.090685
2.	Rajshahi Krishi Unnayan Bank	2087.2- 231.7x	0.424885

Table 23. Trend Equations and r2 of Loan Allocation (Retail and Others)

Sl	Name of Banks	Yc= a+bx	r <sup>2</sup>
1	Bangladesh Krishi Bank	9503.2-197.8x	0.020277
2.	Rajshahi Krishi Unnayan Bank	3422+613.1x	0.739042

Table 24. Trend Equations and r2 of Deposit Interest Rate

Sl	Name of Banks	Yc= a+bx	r <sup>2</sup>
1	Bangladesh Krishi Bank	5.838+0.314x	0.603373
2.	Rajshahi Krishi Unnayan Bank	5.522+0.627x	0.726687

Table 25. Inter parameter Correlation Matrix

Variables	Net Profit	Deposit	Loan	Employees	Branches
Net Profit	1.000000	0.962102	0.97328	0.93572	0.944516
Deposit	0.962102	1.000000	0.994305	0.954131	0.964551
Loan	0.97328	0.994305	1.000000	0.964895	0.975726
Employees	0.93572	0.954131	0.964895	1.000000	0.998336
Branches	0.944516	0.964551	0.975726	0.998336	1.000000