RAISING FARM PRODUCTIVITY THROUGH AGRICULTURAL CREDIT
(A CASE STUDY OF ZARAI TARRAQIATI BANK OF PAKISTAN LIMITED)

NOOR JEHAN* and MOHSIN-UD-DIN MUHAMMAD**

* Institute of Business and Management Sciences, NWFP Agricultural University, Peshawar – Pakistan
** Institute of Development Studies, NWFP Agricultural University, Peshawar – Pakistan

ABSTRACT

The effects of agricultural credit on farm productivity and the income of the small farmer as a result of credit provided by Zarai Tarraqiati Bank of Pakistan was conducted in district Peshawar of NWFP Pakistan in 2006 at Institute of Development Studies NWFP Agricultural University Peshawar. For this purpose a total of 120 respondents (60 from beneficiaries and 60 from non-beneficiaries) who obtained agricultural credit from ZTBL were randomly selected from three sampled villages. 51.66% of the total beneficiaries obtained medium term while 41.66% obtained short-term credit and 8.33% got long-term credit from ZTBL. The data were collected through pre-tested interview schedule. Farming was the main occupation of both respondents. The result reveals that the credit advanced by ZTBL in the study area has made positive effect on the area of wheat and maize. But no effect on the area of peaches and pea. The result shows that in case of wheat and maize there is a significant change in their production. While in case of peaches and pea, it’s non-significant.

Key Words: Agricultural Credit, Farm Productivity, Small Farmers, Tenants, Wells, Mechanical Cultivation, Harvesting And Threshing, Shrinking Agricultural Land, Zarai Tarraqiati Bank

INTRODUCTION

Pakistan is listed among 36 countries facing food crisis. A global surge in food prices is causing havoc across the developing countries resulting in double figure inflation and poor people are compelled to starve. If we look at the situations here in Pakistan, no obvious reason for food inflation other than poor administrative measures could be found. We are ignoring Agriculture sector at the expense of Industrial and tertiary sectors. Agriculture is still the largest sector that generates nearly 20.9 percent of the country’s GDP and provides employment for 43.4 percent of its workforce. Most importantly, 65.9 percent of the population living in rural areas is directly or indirectly dependent on agriculture for their livelihood. (Govt. of Pakistan, Economic Survey, 2007). Rising population, shrinking agricultural land, increasing demand for water resources, widespread land degradation and inadequate infrastructure appear to be the major concerns of the agriculture sector in Pakistan. The credit facilities form an integral part of the process of modernization of agriculture and commercialization of the rural economy. Agricultural credit is an important financial support that a small farmer can get in order to increase his income by adapting improved crop production technology. This include use of improved seed varieties, increased use of fertilizers and plant protection measures, m cycling up of irrigation water deficiency through tube-wells, mechanical cultivation, harvesting and threshing, etc. It is therefore essential that farm credit should be provided for the development of agriculture. This will boost up farm and livestock production, which will improve the socio-economic conditions of farmers.

Different studies have been conducted to know the impact of institutional credit in Pakistan. Anjum (1973) stated that the Agricultural Development Bank of Pakistan did not meet the credit requirement of agriculture sector in Peshawar Tehsil. He found that 72 percent borrowers obtained credit as a package of mix inputs while the rest obtained only one item and 66 percent obtained very small doses of loans of Rs. 500/- per head. The loans advanced for seasonal inputs were properly supervised. However the recovery position was satisfactory and only 4.4 percent went in default. He suggested an effective supervisory credit system in order to meet the requirements of agricultural sector. Malik (1989) stated that the importance of institutional sources of credit had increased as compared to the non-institutional sources for farm sector. Despite the increased importance of institutional sources of credit, the small tenant and farmers had smaller “access” to the institutional credit. He concluded that this problem was worsening with the passage of time. The commercial banks had improved a little more in the case of owner category. It was obvious that the small farms credit schemes had not worked in the past. The analysis showed that the small farmers and tenant were unable to obtain credit because of high institutional interest rates.
Gul and Khan (1993) presented an assessment of the supervised credit advanced by the Agricultural Development Bank of Pakistan in selected villages of Mardan District. They indicated that most of the credit in the area was availed by large farmers and absentee landlords. The ADBP financed fertilizer, and leveling and tractors under short, medium and long-term loans. The present security procedure is seen to be cumbersome and costly to most of the borrowers. They revealed that, the repaying ability of the small farmers was better than the large farmers. They supervised credit scheme has made some headway in agricultural development through dissemination of improved technologies. Some aspects still need improvement.

Himayatullah (1995) stated that in the periods from 1980 to 81 and from 1994 to 95 institutional credit of the agricultural sector had registered an averaged annual growth rate of above 5 percent. This positive change in agriculture credit was accompanied by the establishment of new financial institutional and the adoption of credit policies to increase their flow of credit for the sector in general and for small farmers in particular. He further stated that despite of all the efforts of the Government of Pakistan, the institutional credit was not reaching non-influential small farmers while resourceful farmers were getting more than their requirements. As a matter of fact, non availability of adequate credit was a big problem of farmers, majority of whom were poor, illiterate and they hesitate to accept new ideas or technology. The problem that needs serious attention on the part of policy makers was that the existing credit system was unsound and defective which needed restructuring and revitalization so that the benefits of credit could be trickled down to the target group.

Arif, (2001) examined the effects of Micro Credit disbursement by ADBP on Agricultural production in three selected villages in District Attock. He studied the effect of micro credit on cropping intensity, wheat and vegetable production and the factors that make obstacles in obtaining credit from ADBP. All respondents utilized the credit to get inputs, which increased cropping intensity. The most notable increase was observed in the wheat production. Where as change in vegetable production was found in one village. Due to proper utilization of credit, the income of the sampled respondent increased, however two third of total sample respondents were not satisfied from security procedure due to its time consumption and unnecessarily delay in loan disbursement process. As a whole the study states that credit has made a positive impact on both the crop and vegetable production.

MATERIALS AND METHODS
To compare the impact of credit on farm productivity of small farmers, the sample respondents were divided into two groups on the basis of credit. The respondents availed credit are denoted by beneficiaries while others without credit as non beneficiaries District Peshawar of the NWFP constitutes the area of this study where ZTBL is one of the major sources of micro credit for small farmers having a cultivated land of 5 acres Although there are many villages in District Peshawar. A list of those villages, where ZTBL Peshawar Branch, has advanced loan to maximum households was obtained from the said bank. Three villages namely, Regi, Pawaka and Tehkal were purposively selected, because in these villages maximum number of farmers have borrowed loans from ZTBL, the concerned bank also suggested these.

After selecting the villages, a list of all beneficiaries of ZTBL in each selected village was obtained and then 60 respondents (50%) of the beneficiaries of ZTBL were proportionally selected where as the respondents were randomly selected. Equal numbers of non-beneficiaries (60 respondents) were also taken from the selected villages. Thus total of a 120 respondents from both the categories (60 beneficiaries and 60 non-beneficiaries) were selected for this study. The main objective of the study was to assess the improvement in farm productivity that resulted from the credit facilities obtained. In the light of study objective an interview schedule was prepared and pre-tested in the field. Some amendments were made in the interview schedule on the basis of pre-testing. Data were collected through face-to-face interview with respondents.

Data Analysis
The data collected for the present study were analyzed with the help of SPSS. Since the present study examines the yield of different crops and vegetables, fruits and livestock of beneficiaries and non-beneficiaries coming from the same population, so t-test in case of same but unknown standard deviation was used.
The formula for t-test is:

\[ t = \frac{\left( \bar{x}_1 - \bar{x}_2 \right) - d}{s_p \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} \]

Where,
- \( \bar{x}_1 = \text{Mean value for beneficiaries} \)
- \( \bar{x}_2 = \text{Mean value for non beneficiaries} \)
- \( n_1 \) & \( n_2 = \text{Sample size of beneficiaries and beneficiaries} \)
- \( d = \text{Difference between paired observations} \)
- \( s_p = \text{Sub-samples pooled standard deviation} \)

RESULTS AND DISCUSSION

The data collected shows that the income level of the beneficiary household was much higher than that of non-beneficiary household. The sample respondent reported that they had efficiently utilized credit for farm productivity by the use of better quality of seeds (8.2714), fertilizer (t=8.37), and insecticides (t=9.33) which led to increase in crop yield. Previously they were unable to buy these things having insufficient money income. They sold the surplus yield (especially of wheat and maize) and their income increase there after. The value of t-statistics (t = 12.8079) from Table III is evident of significant increase in the income of farmers at 5% level of significance. Table II examines the impact of ZTBL credit on area and crop yield of beneficiaries. Table II is showing a significant increase in yield of maize (t = 5.4036), wheat (t = 2.8452), peaches (t = 4.3462) for beneficiaries at 5% level of significance. Similarly the area covered under wheat and maize (t= 4.3419) shows significant results but under pea (t = .1809) and Peaches (t=1.3138) shows non-significant findings. The result of t-test for the production of maize, wheat, peaches shows significant increase for beneficiaries as compared with non-beneficiaries. This increase is the result of using better seeds and insecticides (from Table I). The t-test for the production of major fruit peach also show a significant increase. A productive season enabled farmers to earn more. Due to which income of the beneficiaries has significantly increased as is shown in Table III.

### Table I. Comparison of Agricultural Inputs Used in the Study Area

<table>
<thead>
<tr>
<th>Agricultural inputs</th>
<th>*Ben (Beneficiaries)</th>
<th>*N.Ben (Non-beneficiaries)</th>
<th>t-calculated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fertilizer</td>
<td>86.66</td>
<td>51.66</td>
<td>8.37035*</td>
</tr>
<tr>
<td>Insecticides</td>
<td>58.33</td>
<td>36.66</td>
<td>9.33*</td>
</tr>
<tr>
<td>Improved Seeds</td>
<td>50</td>
<td>35</td>
<td>8.2714*</td>
</tr>
</tbody>
</table>

### Table II. Impact of ZTBL Credit on Agriculture through Area and Crop Yield

<table>
<thead>
<tr>
<th>Crop</th>
<th>Area Mean (in Jeribs)</th>
<th>t-ratio</th>
<th>Yields Mean (in Monds)</th>
<th>t-ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ben</td>
<td>N-Ben</td>
<td>Ben</td>
<td>N-Ben</td>
</tr>
<tr>
<td>Wheat</td>
<td>38.24</td>
<td>34.28</td>
<td>16.9949*</td>
<td>53.68</td>
</tr>
<tr>
<td>Maize</td>
<td>38.24</td>
<td>34.28</td>
<td>16.9949*</td>
<td>52.62</td>
</tr>
<tr>
<td>Pea</td>
<td>3.06</td>
<td>2.91</td>
<td>3.4895*</td>
<td>54.17</td>
</tr>
<tr>
<td>Peaches</td>
<td>10.9</td>
<td>10.6</td>
<td>1.1395</td>
<td>56.16</td>
</tr>
</tbody>
</table>

Source: Survey

### Table III. Comparisons of household income in the study area

<table>
<thead>
<tr>
<th>Village</th>
<th>Income Rs/Year (t-statistic)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>*Ben (Beneficiaries)</td>
</tr>
<tr>
<td>Regi</td>
<td>452000</td>
</tr>
<tr>
<td>Pawaka</td>
<td>285600</td>
</tr>
<tr>
<td>Tehkal</td>
<td>183250</td>
</tr>
<tr>
<td>Total</td>
<td>306950</td>
</tr>
</tbody>
</table>

Source: Survey

CONCLUSION AND RECOMMENDATIONS

The result reveals that the credit advance by ZTBL in the study area has made positive effect on the area of wheat and maize. But no effect on the area of vegetable and fruits, which is, provide by t-test (see Table II).
result shows that in case of wheat and maize there is a significant change in their production. While in case of peaches and pea, it is statistically non-significant.

According to the results obtained as well during formal conversation with the farmers it is strongly recommended that the government should support small farmers through such credit schemes but the interest rate charged must be lower than the present one. This could help us raising farm productivity and life standard of small farmers and tenants.

REFERENCES