

The Impact of Institutional Credit on Agricultural Production in Pakistan

MUHAMMAD IQBAL, MUNIR AHMAD, and KALBE ABBAS

I. INTRODUCTION

Three main factors that contribute to agricultural growth are the increased use of agricultural inputs, technological change and technical efficiency. Technological change is the result of research and development efforts, while technical efficiency with which new technology is adopted and used more rationally is affected by the flow of information, better infrastructure, availability of funds and farmers' managerial capabilities. Higher use and better mix of inputs also requires funds at the disposal of farmers. These funds could come either from farmers' own savings or through borrowings. In less developed countries like Pakistan where savings are negligible especially among the small farmers, agricultural credit appears to be an essential input along with modern technology for higher productivity.

Credit requirements of the farming sector have increased rapidly over the past few decades resulting from the rise in use of fertiliser, biocides, improved seeds and mechanisation, and hike in their prices. The agricultural credit system of Pakistan consists of informal and formal sources of credit supply. The informal sources include friends, relatives, commission agents, traders and private moneylenders etc. Presently, the formal credit sources are comprised of financial institutions like Zarai Taraqati Bank Limited (ZTBL)—formerly known as Agricultural Development Bank of Pakistan (ADBP), Commercial Banks, and Federal Bank for Cooperatives. Recently, some non-government organisations (NGOs) are also advancing agricultural credit to the rural communities.

Like most of the developing countries, expansion of subsidised institutional credit has been widely exercised in Pakistan. The target is to attain higher

Muhammad Iqbal, Munir Ahmad, and Kalbe Abbas are Senior Research Economist, Chief of Research, and Research Economist respectively at the Pakistan Institute of Development Economics, Islamabad.

agricultural growth by relaxing liquidity constraints leading to higher input use, adoption of new technology, and a possible diversification of crop mix and farm income sources. However, in case of Pakistan, few studies have focused on the impact of institutional credit on agricultural production. Zuberi (1989) estimated production function for the agriculture sector and concluded that the impact of institutional credit comes through financing of seed and fertiliser. The role of financing fixed investment was found insignificant. However, Qureshi and Shah (1992) observed that institutional credit affects agricultural output also through financing of capital investment. They found that the responsiveness of agricultural output is larger to institutional credit than that of output to fertiliser. Both the studies dropped the important variables like land and water in their finally estimated equations blaming the problem of multicollinearity while overlooking the dependency of purchased inputs like fertiliser and seed on institutional credit.

The purpose of this study is to investigate the impact of institutional credit on agricultural production in Pakistan. It is aimed at estimating the production function relating agricultural output with institutional credit and other independent variables including land and water. The paper will also discuss various indicators of agricultural credit in Pakistan. The study is divided into five parts. The next section discusses formal sources of agricultural credit in Pakistan. The data and methodology are described in Section III. The results are explained in Section IV. The last section concludes the findings of the study and suggests implications.

II. SOURCES OF INSTITUTIONAL CREDIT IN PAKISTAN

The history of institutional credit in Pakistan starts from pre independence meagre amount of *taccavi* loans and loans from cooperative societies that were working at that time. The farmers were heavily dependant on non-institutional sources for their credit requirements. The Land Improvement Loans Act of 1883 (LILA) and Agriculturists Loan Act 1884 (ALA), later on replaced by West Pakistan Agriculturists Loan Act of 1958 (ALA), regulated *Taccavi* loans. Under LILA, loans were disbursed for sinking of irrigation wells/tubewells, land levelling, and land reclamation and development for agricultural purposes. Under ALA, loans were provided for relief of distress and for purchasing seed, fertiliser, cattle, and implements [Yusuf (1984) and Pakistan (2003)]. *Taccavi* loans were disbursed through revenue departments of the provincial governments. The contribution of these loans towards total institutional credit declined overtime with the development of new institutional sources. Small amounts were allocated in provincial budgets for these loans. Moreover, delays and procedural difficulties in sanctioning and disbursement of loans rendered the system of *taccavi* inefficient and ultimately these loans are discontinued since 1993-94.

The cooperatives for credit exist in this region existed since their introduction in India under the Cooperative Credit Societies Act of 1904. The objective was to

provide loans to small farmers through their own local associations on relatively easy terms to free them from clutches of moneylenders and grain merchants. The scope of cooperative activities was enlarged through the Cooperative Societies Act of 1912 to other fields besides agricultural credit and cooperative technique could also be used by urban dwellers [Pakistan (1988)]. The Act gave powers to Provincial Governments to make rules to carry out the purpose of the Act including the settlement of disputes among members and their societies by arbitration. Under the reforms of 1919, Cooperatives became a provincial subject and some of provinces proceeded to enact their own laws relating to cooperative societies. The Government of Bombay passed Bombay Cooperative Societies Act of 1925 to replace the Central Act of 1912 (Sindh was part of Bombay before 1936). The Act of 1925 was more stringent and enhanced the authority of the Registrar giving him the power to impose penalties on managing committees and their members for mismanagement and defalcation. Punjab, NWFP, and Balochistan continued with the Act of 1912. The Cooperative Societies Act of 1925 was extended to whole of present Pakistan during 1965.

Later, the West Pakistan Cooperative Societies and Cooperative Banks (repayment of loans) Ordinance, 1966 provided more powers to the Cooperative Department for recovery of loans [Pakistan (1988)]. The cooperative credit had no formal relationship with the financing of inputs and/or farm investments. It was designed to compete with non-institutional sources of credit and was aimed generally to meet the credit needs of farmers to finance their consumption expenditures [Qureshi and Shah (1992)]. In 1976, the Federal Government established the Federal Bank for Cooperatives (FBC) with the consent of provincial governments and the philosophy behind cooperative credit changed in a fundamental manner. An explicit relationship between the credit and input use and the credit and farm size was postulated. The FBC depends on the State Bank of Pakistan for financial support.

Prior to independence, *taccavi* loans and borrowing from cooperatives were the only sources of institutional credit available to the farmers. Particularly, the small farmers had to depend on non-institutional sources for meeting most of the credit requirements. In order to overcome this inadequacy, two specialised agricultural financial institutions, namely; the Agricultural Development Finance Corporation (1952) and the Agricultural Bank of Pakistan (1957), were established. These two institutions were later merged to form the Agricultural Development Bank of Pakistan (ADBP) on 18 February 1961. Recently, it is renamed as Zarai Taraqiati Bank Limited (ZTBL) and is the leading source of institutional agricultural credit in the country (Appendix Table 3 and Figure 5). ZTBL mainly borrows from the State Bank of Pakistan. However, some special funding programmes of the Bank are funded by multilateral agencies like the World Bank, the Asian Development Bank, and the International Fund for Agricultural Development.

The commercial banks are the other important formal source of agricultural

credit in Pakistan. Prior to the Banking Reform of 1972, commercial banks were generally reluctant to lend to agriculture sector. The financing was limited to agricultural marketing with produce as collateral for the loans [Qureshi and Shah (1992)]. Under the 1972 reforms commercial banks were required to broaden the scope of lending to finance modern farm inputs and investments. The banks are required to fulfil a target lending for agricultural sector and are subject to penalties if they do not meet the target. Unlike the other formal credit institutions, the commercial banks depend entirely on their deposits for financing agricultural credit.

The Agricultural Credit Advisory Committee (ACAC) of State Bank of Pakistan prepares agricultural credit estimates. The annual credit plan along with sectoral and institutional credit ceilings are approved by the National Credit Consultative Council (NCCC). The State Bank of Pakistan performs a vital role in the development of agricultural credit delivery system. Its agricultural credit department is responsible for assessing and determining the agricultural requirement of the country as well as coordinating with the different federal and provincial departments of major agricultural credit disbursing agencies like ZTBL/ADBP, FBC, and commercial banks. Federal Bank of Cooperatives provides production loans while ZTBL/ADBP and commercial banks advance both production and development loans. The NCCC allocates yearly credit targets to these institutions to promote investment in agricultural sector.

III. METHODOLOGY

This study is based on the secondary data collected from various publications of government of Pakistan and office records of the ZTBL/ADBP. The data regarding variables of interest pertains to the financial years 1971-72 to 2001-2002. The study would compute various credit indicators, calculate shares of various financial institutions in total agricultural loans advanced, evaluate purpose wise composition of agricultural credit, and estimate the agricultural production function using agricultural credit as one of the explanatory variables. Conventionally, agricultural production function represents relationship between physical quantities of output and the inputs like land, labour, capital and quantities of other inputs (like water, fertiliser, pesticides etc.). However, as agriculture is a multi-product industry therefore, Agricultural Gross Domestic Product (AGDP) was used as the dependent variable and agricultural production is assumed to be the function of water availability, agricultural labour force, cropped area, and agricultural credit. Other important inputs like tractors, fertiliser, biocides, and improved seeds etc. that may be purchased by using credit money were dropped and agricultural credit was directly introduced as one of the explanatory variables.

The inclusion of credit as an independent variable in the production function is usually criticised on the grounds that it does not affect the output directly; rather it has an indirect effect on output through easing the financial constraints of the producers in

purchasing inputs. However, we included credit as an explanatory variable in the production function based on the argument of Carter (1989). He argued that credit affects the performance of agriculture in three ways: (i) it encourages efficient resource allocation by overcoming constraints to purchase inputs and use them optimally—“...this sort of effect would shift the farmer along a given production surface to a more intensive, and more remunerative, input combination”; (ii) if the agricultural credit is used to buy a new package of technology, say high-yielding seed and other unaffordable expensive inputs, it would help farmers to move not only closer to the production frontier but also shift the entire input-output surface—in this regard it embodies technological change and a tendency to increase technical efficiency of the farmers; and (iii) credit can also increase the use intensity of fixed inputs like land, family labour, and management, persuaded by the ‘nutrition-productivity link of credit’—that raises family consumption and productivity. Carter’s reasoning implies that agricultural credit not only increases management efficiency but also affects the resource allocation and profitability.

In order to avoid the problem of multicollinearity, the dependent and all the explanatory variables were transformed to per cultivated hectare. The Cobb-Douglas type production function given by following equation was estimated

$$LGDP\text{CULT} = \beta_0 + \beta_1 LCR\text{PCULT} + \beta_2 LLB\text{PCULT} + \beta_3 LWAP\text{CULT} \\ + \beta_4 CROP\text{INTE} + \beta_5 DUMMY + U$$

Where

*LGDP*CULT = Natural logarithm of agricultural gross domestic product per cultivated hectare.

*LCR*PCULT = Natural logarithm of institutional credit per cultivated hectare.

*LLB*PCULT = Natural logarithm of agricultural labour force per cultivated hectare.

*LWAP*CULT = Natural logarithm of farm gate availability of water per cultivated hectare.

*CROP*INTE = Cropping intensity (ratio of total cropped area to cultivated area).

DUMMY = Dummy variable for bad years (dummy=1 for years 1974-75, 1983-84, 1992-93, and 2000-2001; Else=0).

U = Random error term independently and identically distributed with zero mean and constant variance.

III. RESULTS AND DISCUSSION

The disbursement of institutional credit (nominal) ranged from 128 million rupees in 1971-72 to about 51348 million rupees in 2001-2002. The growth of

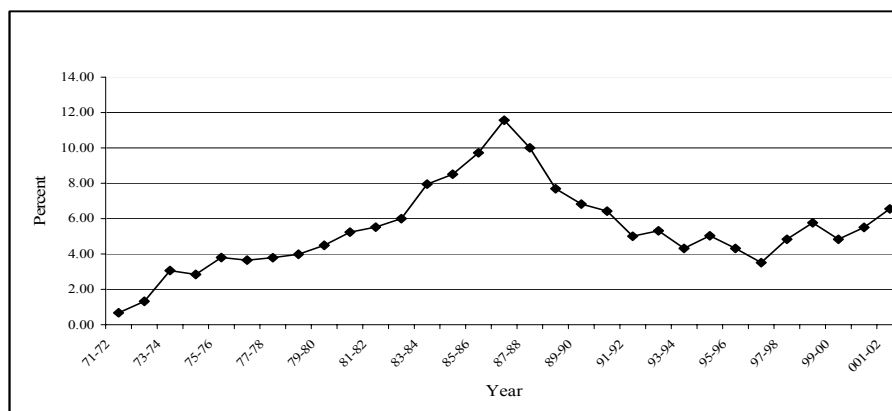
nominal credit remained highest during the period 1971-72 to 1975-76 when it grew at the compound growth rate of 86.48 percent due mainly to banking reforms of 1972 and the smaller credit base. The growth of nominal credit slowed down between mid 1970s to mid 1980s but still was above 20 percent per annum. The growth of nominal credit remained relatively low during the late 1980s to early 1990s. After which with exception of few years it grew at a higher rate. In real terms also the institutional credit showed a similar pattern but with a much smaller growth rate. The growth of real credit after mid 1980s to mid 1990s remained negative (Table 1).

Table 1

Period	Compound Growth Rate (Percent)	
	Nominal Credit	Real Credit
1971-72 to 1975-76	86.48	57.41
1975-76 to 1980-81	20.91	10.93
1980-81 to 1985-86	25.64	18.14
1985-86 to 1990-91	3.64	-4.43
1990-91 to 1995-96	7.22	-3.07
1995-96 to 2001-02	15.87	8.84

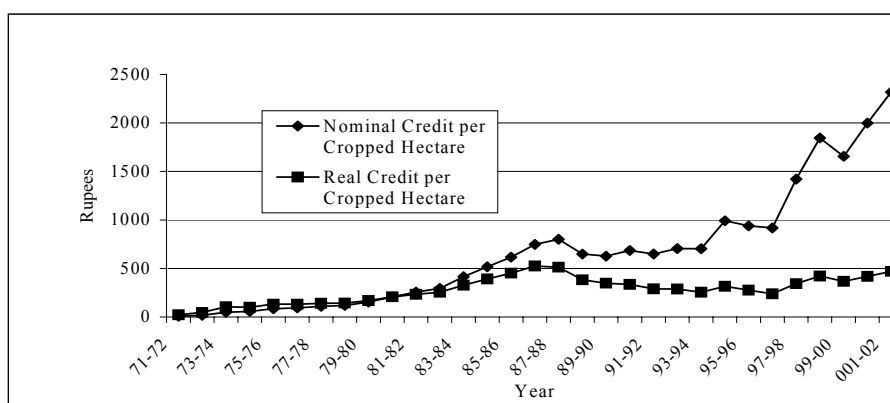
The ratio of institutional credit to agricultural GDP expressed in percentage for the period 1971-72 to 2001-2002 is shown in Figure 1. The institutional credit as the percentage of agricultural GDP grew from 0.67 percent in 1971-72 to a highest of 11.56 percent during 1986-87. Afterwards, the credit as a percentage GDP continuously declined to 6.42 percent during 1990-91 and fluctuated below 6 percent during the period 1991-92 to 2000-01 with a lowest of 3.51 percent occurring in 1996-97. It shows that after the mid 1980s to mid 1990s the institutional credit constituted a smaller and smaller portion of the agricultural GDP.

Fig. 1. Institutional Credit as Percentage of Agricultural GDP.

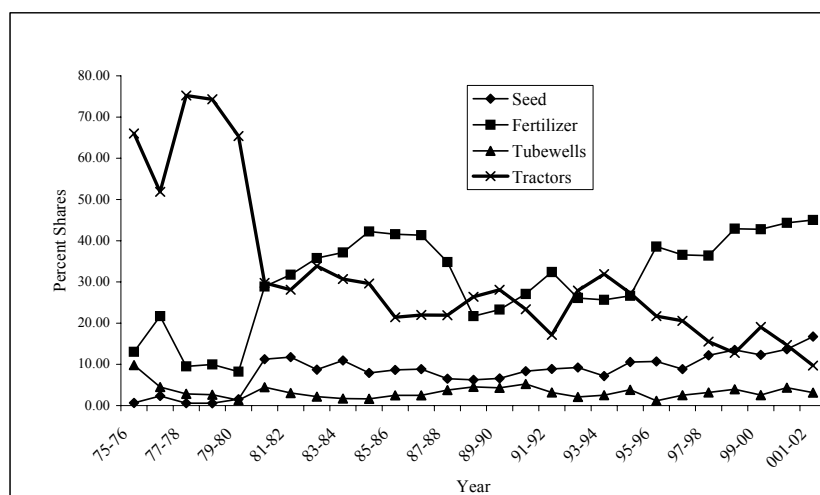


The availability of nominal and real institutional credit on per cropped hectare basis increased continuously till after the mid 1980s and stood at rupees 801.4 and 525 per cropped hectare respectively in 1987-88 and 1986-87. The nominal credit per cropped hectare declined in 1988-89 and fluctuated around 650 rupees per cropped hectare between the years 1988-89 to 1991-92 and after that it rose sharply with the exception of few years (Figure 2 and Appendix Table 1). After 1986-87, the availability of real credit per cropped hectare declined up to 1993-94 after which it recovered slowly to the level of mid 1980s. This declined availability of institutional credit in real terms after mid 1980s and increasing per hectare costs of production due to increasing prices of inputs, withdrawal of input subsidies, and levy of sales tax on inputs like fertiliser and pesticides may have adverse implications for agricultural growth.

Fig. 2. Nominal and Real Credit per Cropped Hectare.



The purpose-wise shares of institutional credit are depicted in Figure 3 and the corresponding data is given in Appendix Table 2. The production loans for purchase of seed and fertiliser constituted a nominal portion of the total institutional credit up to the year 1979-80. However, during the period from 1980-81 to 1984-85 proportion of institutional credit allocated for the purchase of fertiliser rose more sharply and stood at 42.21 percent in 1984-85. Allocation of credit for fertiliser stood above 40 percent for the next couple of years and sharply declined to a level of 21.71 percent in 1988-89. The share of credit for fertiliser started increasing slowly with some fluctuations but remained below 40 percent up to the year 1997-98 after which the share again crossed over 40 percent. The share of institutional credit allocated for the purchase of seed stood above 11 percent during 1980-81 and 1981-82 after which it showed wide fluctuations up to year 1993-94 and remained well below 11 percent except during 1983-84 (10.95 percent). The share of credit allocated to purchase seed

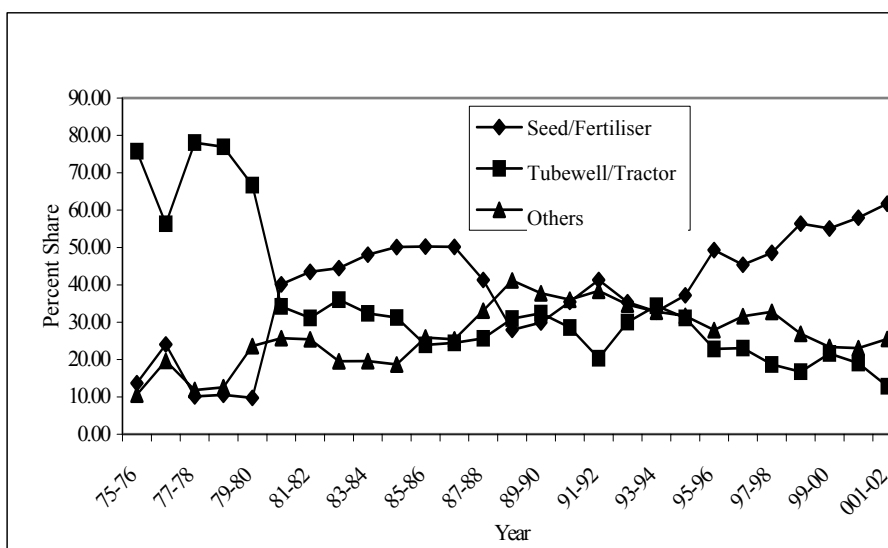
Fig. 3. Purpose-wise Shares of Institutional Credit.

increased continuously after 1993-94 except the year 1996-97 when the share again moved down to 8.83 percent.

The share of institutional credit advanced for installation of tubewells was the highest (9.8 percent) in 1975-76 and during the later years it fluctuated between 1.15 percent (in 1995-96) and 5.21 percent (in 1990-91). In the years prior to 1979-80 most of the institutional credit (over 50 percent in 1976-77 and over 65 percent during the other years) was advanced for the purchase of tractors. This share declined sharply to about 30 percent in 1980-81 and remained roughly constant up to 1984-85. More than one fifth of the institutional credit disbursed between mid 1980s to mid 1990s was allocated for the purchase of tractor with the exception 1991-92 when this share was about 17 percent. After 1996-97 the portion of institutional loan advanced for purchase of tractors remained well below 20 percent.

The share of institutional credit advanced for other purposes showed an increasing trend with relatively smaller fluctuations (Figure 4). The shares of production loans for seed/fertilisers, development loans for tubewells/tractors, and loans for other purposes were relatively closer to each other and fluctuated roughly around one-third each during late 1980s and up to mid 1990s. After mid 1990s, about one-half or more of the total loans advanced were meant for purchase of seed and fertilisers. The share of loans advanced for installation of tubewells and purchase of tractors declined to roughly one-fifth or less during the same period. This shows a shift in credit policy from loans for fixed capital to loans for operational capital during early to late 1980s and after mid 1990s. The detailed data can be seen in Appendix Table 2.

Fig. 4. Purpose-wise Share of Institutional Credit.



Regression Analysis

The Cobb-Douglas type production function suggested in Section III was estimated using the ordinary least squares (OLS) method. Estimation of the production function using original variables showed moderate to strong multicollinearity among the independent variables. Thus the transformed equation given in Section III was estimated. Based on the VIF and condition index, no serious problem of multicollinearity was detected for the estimated equation. However the low value of Durbin-Watson and the Breusch-Godfrey LM test for autocorrelation suggested the presence of autocorrelation. The observation of correlogram of the residuals suggest presence of an AR(1) and MA(1) processes. Therefore the regression equation was re-estimated by adjusting for AR(1) and MA(1). The final estimates of the equation are presented in the following Table 2.

Table 2

The OLS Estimates of Cobb-Douglas Production Function

Variables	Coefficient Estimates	t-Values	Significance
Constant	6.6990	16.395	0.0000
LCRPCULT	0.0801	2.135	0.0442
LLBPCULT	0.7783	4.679	0.0001
LWAPCULT	0.6259	2.648	0.0147
CROPINTE	0.5519	1.709	0.1016
DUMMY	-0.0359	-2.325	0.0297
AR(1)	0.5209	2.554	0.0181
MA(1)	0.6832	3.067	0.0056

$R^2 = 0.981$ Adjusted- $R^2 = 0.975$.

F = 162.165 Durbin-Watson d-statistic= 1.874.

The large value of F-statistics shows that the explanatory variables included in the model collectively have significant influence on agricultural production. The high R^2 and Adjusted- R^2 values suggest that over 97 percent variations in the agricultural production are explained by the explanatory variables included in the model. The coefficient for agricultural credit is positive and significant at 5 percent level and suggests that institutional credit affect agricultural production positively. A ten percent increase in the disbursement of institutional credit would induce an increase of about one percent in agricultural GDP. Similarly, water availability and labour also have a positive and statistically significant impact on agricultural production. The estimate for the coefficient of labour is very close to that estimated by Zuberi (1989). However, it is much smaller than that estimated by Qureshi and Shah (1992). The coefficient for the cropping intensity variable is also positive and is significant at 10 percent level. It shows that increase in cropping intensity increases agricultural GDP. The negative sign of the coefficient for dummy variable shows that the shocks like floods, Cotton Leaf Curl Virus (CLCV), and drought have caused significant decline in agricultural output per cultivated hectare.

IV. CONCLUSIONS

The institutional credit expanded at quite a high rate during the past three decades. The rate of growth of nominal credit was slowest especially in the period after the mid 1980s to mid 1990s while the growth of real credit was negative during the same period. The availability of institutional credit per cropped hectare increased in nominal as well as in real terms and showed a similar pattern over time. The ZTBL/ADBP and the commercial banks constitute the major sources of formal credit. The share of commercial banks in the total institutional credit declined over time especially in the 1990s. A significant shift from institutional credit for investment in fixed capital like tubewells and tractors to loans advances for operational expenditures like purchase of seed and fertiliser was observed especially in early to after mid 1980s and after mid 1990s. The relationship between institutional credit and agricultural GDP was found to be positive and significant. Availability of irrigation water and agricultural labour per cultivated hectare, and cropping intensity are the other important determinants of agricultural GDP.

It is suggested that the commercial banks and other financial institutions be encouraged to expand agricultural credit and extend the net of institutional credit to a larger proportion of the farming community especially, the small farmers. These institutions are required to extend consumption loans to the needy farmers in case of a large-scale crop failure especially to farmer with good loan records and these loans be granted in addition to the credit required for their farm operations. Moreover, a crop insurance scheme may be launched to provide cover to farmers against losses from drought, pest attacks, hailstorm, thunderstorm, heavy rains, and other natural hazards on payment of small premium in addition to credit markup.

An agricultural credit card scheme should be initiated with generous credit limit (kharif and rabi seasons) for each farmer based on productivity of the land he/she is cultivating and other assets as collateral. At least 20-25 percent of this limit may be allowed to him/her as consumption loans especially, during bad years. The amount of loans obtained and repaid should be kept on deducting or adding to this limit automatically.

Presently, most of the institutional loans are invested in crop production. The livestock is also an important sub-sector of the economy accounting for about 39 percent of the value added in agriculture. Increased institutional loans for dairy and other livestock production activities may prove as a catalyst in achieving higher agricultural growth and in the fight against rural poverty.

Appendix Table 1

*Institutional Credit as Percent of Agricultural GDP and Nominal and
Real Credit per Cropped Hectare*

Year	Credit to Agricultural GDP Ratio (%)	Credit per Cropped Hectare (in Nominal Rupees)	Credit per Cropped Hectare(in Real Rupees)
1971-72	0.67	7.72	23.43
1972-73	1.32	18.12	47.58
1973-74	3.06	49.96	105.8
1974-75	2.84	58.15	100.46
1975-76	3.80	85.89	132.70
1976-77	3.65	94.26	131.65
1977-78	3.79	110.78	141.89
1978-79	3.98	119.15	144.95
1979-80	4.49	154.53	170.70
1980-81	5.23	209.05	209.05
1981-82	5.52	257.41	234.87
1982-83	6.00	296.09	256.65
1983-84	7.95	415.73	328.70
1984-85	8.51	518.45	392.44
1985-86	9.72	617.30	453.03
1986-87	11.56	748.11	525.58
1987-88	10.00	801.41	513.91
1988-89	7.69	649.10	383.82
1989-90	6.82	627.36	348.82
1990-91	6.42	686.00	336.82
1991-92	5.00	650.32	289.83
1992-93	5.31	705.22	288.70
1993-94	4.31	704.77	256.12
1994-95	5.03	992.37	317.46
1995-96	4.31	939.15	277.46
1996-97	3.51	919.21	239.39
1997-98	4.83	1421.38	343.83
1998-99	5.76	1844.93	421.61
1999-00	4.83	1656.18	368.22
2000-01	5.50	1999.05	419.16
2001-02	6.55	2318.19	471.16

Appendix Table 2

Purpose-wise Distribution of Institutional Credit Disbursed by ZTBL/ADBP and Commercial Banks in Pakistan

(Percent Shares)

Year	Seed	Fertiliser	Sub- Total	Tubewells	Tractors	Sub- Total	Others	Grand Total
1975-76	0.62	13.01	13.63	9.80	65.99	75.79	10.58	100.00
1976-77	2.33	21.69	24.02	4.50	51.86	56.36	19.62	100.00
1977-78	0.58	9.52	10.10	2.83	75.24	78.07	11.83	100.00
1978-79	0.55	9.97	10.52	2.64	74.30	76.94	12.54	100.00
1979-80	1.52	8.21	9.73	1.31	65.37	66.68	23.59	100.00
1980-81	11.24	28.87	40.11	4.44	29.75	34.19	25.70	100.00
1981-82	11.73	31.74	43.47	3.03	28.10	31.13	25.40	100.00
1982-83	8.70	35.78	44.48	2.15	33.84	35.99	19.53	100.00
1983-84	10.95	37.12	48.07	1.69	30.68	32.37	19.56	100.00
1984-85	7.91	42.21	50.12	1.62	29.60	31.22	18.66	100.00
1985-86	8.64	41.58	50.22	2.45	21.43	23.88	25.90	100.00
1986-87	8.82	41.33	50.15	2.48	21.97	24.45	25.40	100.00
1987-88	6.50	34.79	41.29	3.74	21.91	25.65	33.06	100.00
1988-89	6.21	21.71	27.92	4.55	26.38	30.93	41.15	100.00
1989-90	6.60	23.29	29.89	4.30	28.09	32.39	37.72	100.00
1990-91	8.34	27.07	35.41	5.21	23.36	28.57	36.02	100.00
1991-92	8.89	32.39	41.28	3.17	17.16	20.33	38.39	100.00
1992-93	9.24	26.09	35.33	2.08	27.90	29.98	34.69	100.00
1993-94	7.14	25.65	32.79	2.50	31.90	34.40	32.81	100.00
1994-95	10.57	26.62	37.19	3.82	27.30	31.12	31.69	100.00
1995-96	10.72	38.57	49.29	1.15	21.67	22.82	27.89	100.00
1996-97	8.83	36.55	45.38	2.51	20.54	23.05	31.57	100.00
1997-98	12.20	36.38	48.58	3.15	15.51	18.66	32.76	100.00
1998-99	13.49	42.90	56.39	3.94	12.77	16.71	26.90	100.00
1999-00	12.29	42.77	55.06	2.53	19.07	21.60	23.34	100.00
2000-01	13.64	44.33	57.97	4.33	14.67	19.00	23.03	100.00
2001-02	16.72	45.00	61.72	3.14	9.68	12.82	25.46	100.00

Appendix Table 3

Percent Share of Various Financial Institutions in Formal Agricultural Credit

Year	ZTBL/ ADBP	Commercial Banks	Sub-total		
			ADBP+Com. Banks	Federal Bank for Cooperatives	Taccavi
1971-72	62.50	00.00	62.50	30.53	6.97
1972-73	55.03	27.94	82.97	13.70	3.33
1973-74	45.46	31.36	76.82	15.79	7.39
1974-75	39.16	51.57	90.73	8.07	1.20
1975-76	36.51	55.43	91.94	6.30	1.76
1976-77	37.16	56.51	93.67	5.56	0.77
1977-78	20.98	63.02	84.00	15.55	0.44
1978-79	18.11	60.06	78.17	21.27	0.55
1979-80	23.90	53.44	77.34	22.35	0.31
1980-81	26.66	45.68	72.34	27.45	0.21
1981-82	30.46	47.85	78.31	21.52	0.17
1982-83	38.55	39.23	77.78	22.03	0.19
1983-84	37.27	45.36	82.63	17.27	0.09
1984-85	39.71	45.27	84.98	14.95	0.06
1985-86	41.67	42.51	84.18	15.78	0.04
1986-87	37.99	46.72	84.71	15.2	0.09
1987-88	48.57	33.06	81.63	18.31	0.06
1988-89	60.20	21.55	81.75	18.07	0.18
1989-90	68.87	26.96	95.83	3.76	0.41
1990-91	54.90	25.80	80.70	18.92	0.38
1991-92	51.53	31.08	82.61	16.98	0.42
1992-93	53.92	28.56	82.48	17.20	0.32
1993-94	57.69	26.38	84.07	15.83	–
1994-95	65.54	18.29	83.83	16.17	–
1995-96	48.36	23.72	72.08	27.92	–
1996-97	55.34	21.11	76.45	23.55	–
1997-98	68.08	17.39	85.47	14.53	–
1998-99	70.22	17.00	87.22	12.78	–
1999-00	64.18	24.40	88.58	11.42	–
2000-01	61.95	27.09	89.04	10.96	–
2001-02	56.18	33.83	90.01	9.98	–

REFERENCES

- Agricultural Development Bank of Pakistan (Various Issues) *Agricultural Credit Indicators*. Islamabad: Central Information Department, MIS Division.
- Carter, M. R. (1989) The Impact of Credit on Peasant Productivity and Differentiation in Nicaragua. *Journal of Development Economics* 31, 13–36.
- Pakistan, Government of (2003) *Agricultural Statistics of Pakistan 2001-2002*. Islamabad: Economic Wing, Ministry of Food, Agriculture and Livestock.
- Pakistan, Government of (2003) *Economic Survey 2002-2003*. Islamabad: Economic Advisor's Wing, Finance Division.
- Pakistan, Government of (1988) *Report of the National Commission on Agriculture*. Islamabad: Ministry of Food, Agriculture and Livestock.
- Qureshi, Sarfraz Khan, and Akhtiar H. Shah (1992) A Critical Review of Rural Credit Policy in Pakistan. *The Pakistan Development Review* 31:4, 781–801.
- Yusuf, Muhammad (1984) *In Farm Credit Situation in Asia*. Tokyo: Asian Productivity Organisation. 455–494.
- Zuberi, Habib A. (1989) Production Function, Institutional Credit and Agricultural Development in Pakistan. *The Pakistan Development Review* 28:1, 43–56.