Impact of Credit on Agriculture Production in Pakistan: A Review

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Abstract

The agricultural sector holds a crucial position in Pakistan’s economy, contributing 22.9% to the gross domestic product (GDP). This sector serves as a primary source of food, income, and employment, especially for the rural population, which constitutes the majority. Pakistan, ranked as the 5th most populous nation globally, has about 34.7% of its people residing in urban areas, while the rest live in rural regions, relying heavily on agriculture for sustenance. Various factors of production play pivotal roles in agriculture, and among them, credit emerges as a crucial input for enhancing crop production and augmenting the income of rural households. Access to credit is essential for implementing modern technologies and utilizing improved agricultural inputs, ultimately boosting productivity. Despite its significance, providing credit to smallholder farmers poses challenges for financial institutions. The inherent risk associated with agricultural production, including factors like seasonality, irregular cash flows, and the vulnerability to natural disasters and crop diseases, makes it a less attractive investment for financial institutions. Limited access to credit is primarily attributed to imperfect financial markets, where information asymmetry results in credit rationing. Many farmers, particularly those in remote areas, face difficulties in accessing credit institutes. Institutional factors such as corruption, regulatory quality, government effectiveness, political stability, and the rule of law further hinder farmers’ ability to secure credit. Consequently, ensuring easy access to credit facilities for the farming community is imperative for addressing these challenges. For Pakistan and other developing nations, promoting agricultural productivity requires tackling these issues and facilitating seamless access to credit for farmers. By addressing the impediments in the financial system and enhancing institutional factors, nations can foster an environment where farmers can readily access credit, thereby improving productivity and ensuring food security.

Keywords: Agricultural Credit, Production, Food Security, Credit Institutes, Rural Welfare.


Importance of Agricultural Credit

An important source of food, revenue, and jobs, the agricultural industry is vital to Pakistan’s economy (Chandio et al., 2018b; Rehman et al., 2019). With a contribution to the GDP of about 22.9%, this industry makes a substantial contribution (GOP, 2023). With an expected population of 242,139,148 as of 2022, the country ranks fifth in the world in terms of population density. Of this population, roughly 34.7% live in urban areas, with the majority living in rural communities. The majority of people living in rural areas depend on agriculture for their daily needs. A number of production factors are important in agriculture, and credit is one of the most important inputs for increasing crop productivity and raising rural households' incomes.
A crucial component of increasing crop yield and raising rural people’ incomes is agricultural financing. It is not only essential to small- and medium-sized farmers’ subsistence, but it also helps large-scale agriculturalists diversify their revenue streams (Das et al., 2009). Pischke (1978) asserts that credit is essential to the advancement of farming practices since it makes it easier for farmers to accept new technology and better agricultural inputs, which raises production in the end. According to researchers like David and Meyer (1980), Petrick (2004), and Foltz (2004), having access to credit is the first step towards "additionality," which increases the usage of debt-financed agricultural inputs and, ultimately, increases farm output. In essence, credit serves as a fundamental ingredient that stimulates investment in farm inputs and fosters the adoption of modern techniques, leading to improved agricultural productivity. To support farmers, Pakistan has established various institutions that provide credit, thereby enabling them to invest in their farms and contribute to the overall growth of the agricultural sector.

Credit Institutes in Pakistan

In Pakistan, the agricultural loan system encompasses both formal and informal sources. Informal lending sources include friends, family members, commission agents, dealers, and private lenders. Presently, major financial institutions like Zarai Taraqiati Bank Limited, commercial banks, and cooperative companies constitute the primary formal sources of loans. Given the limited savings among farmers in developing countries like Pakistan, both formal and informal lenders play a crucial role in meeting the credit needs of farmers. The demand for credit in the agricultural sector has surged due to the modernization of agriculture over recent decades (Jan et al., 2012). Recognizing the significance of credit in the agricultural sector, the government of Pakistan has established an extensive network to facilitate agricultural credit. With more than 3900 branches across 26 commercial banks, the country's formal banking sector is actively involved in providing credit facilities to farmers. Additionally, numerous microcredit banks and small corporations contribute to meeting the credit needs of farmers nationwide (Abdullah et al., 2015).

To further support the agriculture sector, the State Bank of Pakistan has set an indicative agricultural credit disbursement target of Rs 1,819 billion for FY2023. This target reflects a 28.2 percent increase from the previous year’s disbursement of Rs 1,419 billion. Currently, 46 formal financial institutions are involved in providing agricultural loans to the farming community. This includes five major commercial banks, 13 medium-sized domestic private banks, six Islamic banks, two specialized banks (ZTBL & PPCBL), and 11 microfinance banks, in addition to nine Microfinance Institutions/Rural Support Programmes (MFIs/RSPs) (GOP, 2023).

The Pakistani government is currently concentrating its investments on enhancing the infrastructure for rural communities. Data on credit provided by different banks for the year 2022–2023 is shown in Table 1.

Table 1. Supply of Agriculture by Institutions (Rs Billion)

<table>
<thead>
<tr>
<th>Banks</th>
<th>Target FY2022</th>
<th>FY2022 (July-March)</th>
<th>Target FY2023</th>
<th>FY2023 (July-March)</th>
<th>% Change over the Period</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Disbursed</td>
<td>Achieved (%)</td>
<td>Disbursed</td>
<td>Achieved (%)</td>
<td></td>
</tr>
<tr>
<td>5 Major CBs</td>
<td>900</td>
<td>525.7</td>
<td>966</td>
<td>666.7</td>
<td>69.0</td>
</tr>
<tr>
<td>ZTBL</td>
<td>105</td>
<td>47.0</td>
<td>124</td>
<td>47.1</td>
<td>38.0</td>
</tr>
<tr>
<td>PPCBL</td>
<td>13</td>
<td>4.8</td>
<td>13</td>
<td>6.2</td>
<td>47.7</td>
</tr>
<tr>
<td>DPBs (13)</td>
<td>327</td>
<td>196.1</td>
<td>350</td>
<td>259.6</td>
<td>74.2</td>
</tr>
<tr>
<td>IBs (6)</td>
<td>120</td>
<td>54.0</td>
<td>103</td>
<td>62.0</td>
<td>60.2</td>
</tr>
</tbody>
</table>
Since money is involved in every aspect of life, farmers require credit in order to buy new technology, seeds, fertilizer, input materials, and land for agricultural expansion (Abdullah et al., 2015).

### Importance of Access to Credit

Economic theory highlights the critical role that credit availability plays in the agricultural sector's shift from subsistence to commercial farming (Ahmad, 2011; Barry and Robison, 2001). Formal credit availability is critical to farm management and profitability; the importance of agricultural credit is demonstrated by the fact that it helps small and medium-sized farmers increase their productivity, which in turn reduces food insecurity and rural poverty (Webb and Kennedy, 2014; Pandey et al., 2016 and Stein et al., 2016). Finance-constrained farmers use less inputs in their productivity than their counterparts, which provides an explanation for the beneficial effects of agricultural finance. Expanded finance availability empowers farmers to make more informed and logical management choices about the best use of inputs, which eventually boosts profitability (Mesfin et al., 2011 and Rehima et al., 2013). For smallholder farmers, the significance of having proper access to and availability of agricultural loans is emphasized. This helps them acquire the essential farming inputs and cutting-edge technologies required for their operations (Chandio et al., 2018 and Saqib et al., 2018).

Still, a number of factors might affect credit availability, including the characteristics of the farmer's household, including age, level of education, experience, ownership of land, animals, and income from sources other than farming (Sanusi and Adedeji, 2010; Rehima et al., 2013 and Byerlee et al., 2014). Given these considerations, it becomes imperative for Pakistan and other developing nations to prioritize measures that ensure easy access to credit facilities for the farming community. This strategic approach is crucial for boosting productivity and fostering economic growth in the agricultural sector.

### Nexus between Financial Development and Agriculture

Financial development is known to mobilise savings, manage investment risks, and facilitate the trade of commodities and services, all of which contribute to economic progress (Demetriades and Hussein, 1996; Greenwood and Jovanovic, 1990; Levine, 1997 and Shaw, 1973). Giving credit and funding is the financial sector's primary function in the agriculture industry. However, due to the substantial risks involved in agricultural production, Raifu and Aminu (2019) claim that commercial banks are cautious when it comes to extending credit to farmers. Furthermore, because they are mostly impoverished, farmers have issues with moral hazard because they cannot obtain loans without collateral. The quality of an economy's institutions determines loan availability and financial sector facilitation (Acemoglu et al., 2005).

According to Kohansal et al., (2008), agricultural finance promotes the growth and modernization of the agricultural industry. Positive effects on agricultural productivity are demonstrated by an empirical investigation of the effects of financial development in the agricultural sector by Ogbanje et al. (2012), Obilor (2013), and Agunuwa et al., (2015) (Ayaz and Hussain, 2011; Bashir et al., 2010; Chisasa and Makina, 2013; Dong et al., 2010; Feder et al. 1989; Abel et al., 2015; Iqbal et al., 2003; Wicaksono, 2014). According to Anthony et al. (2015), increased agricultural output may result from private borrowing, which is seen as a stand-in for financial liberalisation. Rehman et al. (2017) and Iqbal et al. (2003) come

| MFIs (11) | 195 | 112.1 | 57.5 | 230 | 158.7 | 69.0 | 41.5 |
| MFIs/RSPs | 40  | 18.6  | 46.6 | 33  | 21.6  | 65.4 | 15.9 |
| Total     | 1,700 | 958.3 | 56.4 | 1,819 | 1,221.9 | 67.2 | 27.5 |

Source: GOP, 2023
to similar conclusions. Stated differently, farmers can expand the boundaries of their production by obtaining financing. However, other research has also shown that there is no statistically significant relationship between agricultural productivity and loan availability (Hazarika and Alwang, 2003; Reyes et al., 2012). The favourable correlation between agricultural credit and agricultural GDP is investigated by Anh et al. (2020).

Enhancing agricultural production in Pakistan requires the strategic utilization of fertilizers, pesticides, improved crop varieties, modern technology, and irrigation. This necessitates the provision of formal credit to support rural households, as highlighted by Chandio et al. (2018). Credit is fundamental not only for the farming sector but also for overall economic activities, particularly in rural economies undergoing modernization and commercialization. In rustic economies, institutional credit is crucial for the agricultural sector, enabling farmers to acquire contemporary equipment and adopt modern technologies, as emphasized by Schultz (1980) and Zuberi (1989). The use of up-to-date agricultural inputs has proven to be a key factor in boosting production, a strategy adopted by many developed nations. For farmers in rustic economies, access to agricultural credit is essential for acquiring these technologies and elevating agricultural productivity, echoing the insights of Mellor (1966).

Moreover, research like (Iqbal et al., 2003; Hadley, 2006 and Ayaz and Hussain, 2011) shows that finance availability is crucial for improving farmers' technological efficiency. According to Akudugu et al. (2012), agricultural finance in this situation acts as a stimulant to increase farmers' ability to adapt to new technology. For the agricultural industry to become more productive, agricultural loans must be easily accessible and available. Consequently, as recommended by Vogt (1978), it is imperative that the Pakistani government fulfil the credit requirements of the agriculture industry.

### Role of Credit in Food Security

Wheat, rice, and sugarcane constitute the vital food crops in Pakistan, with wheat standing out as the predominant staple for a substantial portion of the population. Unfortunately, many farmers, hindered by financial constraints, struggle to achieve optimal wheat production, leading to income losses. This scenario contributes to heightened food insecurity in Pakistan, as noted by Abdullah et al. (2015). The infusion of credit into the agricultural sector emerges as a pivotal solution to encourage wheat production. Access to credit empowers farmers to procure high-quality inputs and engage in timely cultivation practices, ultimately amplifying production output. This surge in productivity serves as a potent antidote to food insecurity, creating a more resilient and food-sufficient environment. Therefore, the provision of agricultural credit emerges as a strategic avenue to ensure and enhance food security in Pakistan (Asghar & Salman, 2018).

### Theory of Financial Intermediation

The pivotal role of finance in business has been extensively explored in various studies, with the theory of financial intermediation standing out as a significant contributor to understanding the relationship between finance and economic growth. Initially formulated by Gurley and Shaw in 1960, this theory gained widespread recognition, with scholars like Bernanke (1983) and Diamond (1984) further emphasizing the crucial role of finance in fostering economic development. The essence of the theory lies in the recognition of financial constraints as substantial obstacles to income-generating activities. Removing these constraints is posited as a catalyst for growth. The foundational principles of the theory draw upon asymmetry information theory and agency theory. Historically, borrowers and lenders lacked mutual information, and there was no common agency facilitating their interaction. The theory acknowledges banks as essential "agencies" that bridge the informational gap between lenders and
Numerous researchers, such as King and Levine (1993), Obstfeld (1992), Bencivenga et al. (1995), Greenwood and Smith (1997), Levine (1997), and Demirguc-Kunt and Levine (2008), have leveraged this theory to establish the connection between finance and economic growth or production. This current study aligns itself with this theoretical framework to explore the intricate relationship between finance and economic growth. Finance plays a crucial role in supporting both businesses and economic activities, with a particularly vital connection between agricultural credit and production. Banks are pivotal in the development of agriculture, especially in developing countries where issues like food scarcity, poverty, and hunger persist. Governments in these nations are actively working to increase agricultural productivity by providing financial support to farmers (Mellor, 2001).

Agricultural credit empowers farmers to adopt improved farming practices by utilizing higher-quality inputs. Government allocations for agricultural credit have been consistently increasing, contributing significantly to positive production outcomes (Sjah et al., 2003). In addition, the challenge of ensuring access to safe and healthy food is escalating due to limited supply and high inflation. Governments can address this issue by investing in biotechnology, encouraging innovative agricultural practices, and providing financial assistance and advanced technologies to support small-scale farmers. These initiatives would not only enhance the efficiency of the agriculture sector but also ensure effective food production. Furthermore, increased food production can have a positive impact on society by improving access to food, making it more affordable, and offering a greater variety of food options (Laha, 2004).

**Role of Credit in Rural Welfare**

The income, food security, rural development, and production scale of farmers are significantly impacted by agricultural financing (Jodha 1981; Reyes et al. 2012). Furthermore, funding for rural areas can raise farm output, as more agricultural finance is available to support pro-poor agricultural growth and the elimination of poverty (Winter-Nelson and Temu, 2005; Mundial, 2008). The literature has proven a strong link between crop yield and the timely availability of primary farm inputs (Conning and Udry, 2007; Quoc Duy, 2011; Nouman et al., 2013).

Credit is a critical factor in improving the welfare of the rural poor by providing ease of use, reducing vulnerability in short-term revenues, and enhancing the productive capacity of poor farmers through financing improvements in physical and human resources (Okurut et al., 2004). Financial development enables farmers to adopt modern agricultural technologies, invest in the farming sector, and significantly enhance agricultural productivity, thereby improving farmers' livelihoods. According to Anh et al. (2020), financial services that are widely available, flexible, and affordable are crucial for raising agricultural production per worker. Formal agricultural credit in the agriculture sector may not directly enhance crop productivity but can assist smallholders in overcoming financial constraints to adopt improved farming practices (Chandio et al. 2020). Adejobi and Atoatele (2008) concluded that sustained access to formal agricultural credit is crucial for poverty reduction among smallholders, contributing to crop productivity and rural development.

Given that many agriculturists are poor and reside in rural areas, access to credit becomes crucial for carrying out agricultural activities, purchasing quality inputs, and improving yields (Sheik & Abbas, 2007). Provision of credit is essential for achieving the goal of eradicating hunger by enhancing food production (Khan et al., 2007). Agriculture not only provides raw material to industries but also plays a crucial role in supplying food to the entire nation. Rural credit facilitates farmers in enhancing crop quality by alleviating financial constraints (Bashir et al., 2007). It also significantly impacts rural money creation,
living standards, and overall quality of life. Credit enables poor farmers to acquire necessary inputs, hire labor and machinery, and meet other requirements (Jehan & Muhammad, 2008). Moreover, credit is indispensable for developing countries' governments aiming to address food insecurity, as food security is closely tied to the agriculture sector. Thus, expanding the agriculture sector becomes imperative to overcome food shortages (Vatta et al., 2008).

**Constraints**

A credit-constrained farmer is one who, after applying for a loan, receives an amount less than the requested sum or is unable to borrow due to high transaction costs (Dong et al., 2010; Feder et al., 1990; Reyes et al., 2012). Despite the pivotal role of credit, allocating it to smallholder farmers poses challenges for financial institutions (Mukonyora and Bugo, 2013). Agricultural production's perceived high risk, stemming from seasonality, irregular cash flows, and natural disasters, makes financial institutions wary (IFC, 2014; Maurer, 2013; Rahman and Smolak, 2014). Limited credit access results from imperfect financial markets, driven by information asymmetry leading to credit rationing (Stiglitz and Weiss, 1981). Contrary to the emphasis on credit access, Karlan et al. (2014) argue that improving smallholder farmers' production relies more on risk management and insurance than on credit access.

Despite increased agriculture credit initiatives, farmers in Pakistan still face credit-related challenges. Many farmers, especially those in remote areas, struggle to access credit due to distance from cities and credit institutions (Bashir et al., 2010). Larger and educated farmers tend to receive more credit, while smaller, illiterate farmers face limitations (Chandio et al., 2018a). Institutional factors such as corruption, regulatory quality, and government effectiveness affect credit accessibility. Inefficient credit utilization may explain the insignificant impact of institutional credit (Hussain, 2012).

Previous studies highlight that credit source, distance, bribes, and transaction costs negatively influence formal credit demand. Small-scale farmers face stringent conditions and high costs, pushing them towards informal credit sources due to a lack of social capital and material collateral (Akram and Hussain, 2008). Consequently, these farmers turn to informal sources to meet their credit needs, exacerbating the challenges in accessing formal agricultural loans.

**Conclusion**

The agricultural sector, integral to production, faces various challenges resulting in decreased yields. Among these challenges, insufficient access to finance emerges as a prominent factor contributing to reduced production. This study aims to uncover the influence of credit on agricultural output.

The "Theory of Financial Intermediation" underscores the intermediary role of finance in business and economic activities, leading to increased production and profitability. Therefore, it can be inferred that credit significantly and positively impacts the enhancement of agricultural production, subsequently contributing to food security. However, the current scenario indicates that agricultural credit is extended with collateral requirements and interest charges, diminishing borrowers' profits. Moreover, credit terms disproportionately disadvantage small-scale farmers.

To address these issues, it is suggested that interest rates on agricultural credit be waived, and collateral conditions be relaxed to provide relief to financially strained farmers. Such measures would serve as an encouragement for farmers to boost food production. In Pakistan, where a considerable portion of farmers lacks literacy and awareness of advanced technologies, the government should facilitate access to modern harvesting machinery through affordable installment plans. Additionally, conducting training sessions and workshops will help farmers adapt to and benefit from new technologies. As inflation rises
over time, the existing per acre credit amount becomes insufficient to procure quality inputs. To remedy this, it is recommended to increase the per acre credit amount and expand the reach of bank branches in rural areas. These steps aim not only to alleviate poverty by boosting farmers’ income but also to establish self-reliance and food security in Pakistan.

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