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High Demand and Limited Access to Agricultural Credit: Evidence from Farmers in Nangarhar Province, Afghanistan

Naeemullah Rahmani^{1*}, Hamidullah Younisi², Abdulwadood Nori³, Mohammad Sadiq Naseri⁴

¹Logar University, Department of Agricultural Economics and Extension, Faculty of Agriculture, Logar, AF

^{2&4}Afghan International Islamic University (AIJU), Department of Agricultural Economics and Rural Development, Faculty of Agriculture, Kabul, Afghanistan

³Paktia University, Department of Agricultural Economics and Extension, Faculty of Agriculture, Paktia, AF

Abstract

Agricultural credit plays a critical role in enhancing farm productivity and sustaining rural livelihoods in developing economies characterized by capital-constrained smallholders. This study examines farmers' credit demand, its structure, and the barriers affecting access to formal financial services. Primary data were collected through a structured questionnaire administered to 240 farmers across ten districts of Nangarhar Province. Descriptive statistics, Likert-scale analysis, and cross-tabulations were used to analyze credit demand and utilization. The results revealed that 90.42% of surveyed farmers expressed a demand for agricultural credit, with 40.0% reporting a very high level of demand, while 62.5% of respondents identified government sources as their preferred source of credit. However, only 11.3% of respondents were aware of formal credit programs. Collateral availability emerged as a significant barrier, as only 38% of households possessed formal land documentation. Farmers primarily demanded small-ticket loans: 79.73% of respondents reported a credit demand of less than AFN 200,000 for seasonal input purchases. In addition, farmers showed a strong preference for installment-based and seasonal repayment schedules. These findings highlight a structural paradox: while farmers recognize the importance of credit for improving agricultural productivity, institutional barriers continue to limit access to formal financial systems. Policy recommendations include expanding financial services, strengthening awareness campaigns, introducing alternative collateral mechanisms, aligning repayment schedules with agricultural cycles, and linking credit provision with extension services. The study provides actionable insights for policymakers and financial institutions seeking to design inclusive and accessible credit schemes tailored to the needs of smallholder farmers in Nangarhar Province.

Keywords: Agricultural credit; Credit demand; Smallholder farmers; Afghanistan; Nangarhar

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Introduction

Afghanistan has been grappling with a dire economic crisis for a long period, and rural households are among the hardest hit. Food insecurity has reached critical levels, affecting a

*Email: naeemullahrahmani@gmail.com (corresponding author)

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large share of the population. An estimated 14.8 million people were acutely food insecure in late 2025 (World Bank, 2026). In this context, revitalizing agriculture is vital for safeguarding livelihoods and food security. Agriculture is the cornerstone of Afghanistan's economy, contributing (34.32%) to the nation's Gross Domestic Product (GDP) (NSIA, 2024). Approximately 70 percent of Afghanistan's population lives and works in rural areas, and nearly 61 percent of households derive their income from agriculture and related activities, employing over 60% of the population, particularly in rural areas (Jauhar, 2024; Leao et al., 2018). Nangarhar Province is one of the country's most productive agricultural regions, and agriculture is a key sector of livelihood, employment, and household income. 44.44% of the province's population is employed in agriculture (Nangarhar Provincial Profile, 2019).

Despite this potential, Afghan agricultural productivity remains low. Mainly due to reliance on subsistence practices, limited access to credit, and poor adoption of improved technologies (Sarfarazi & Mohammadi, 2024). Nangarhar's agriculture remains largely traditional and labor-intensive, with underdeveloped infrastructure, inadequate irrigation, and limited access to extension services, modern inputs, and financial support (World Bank, 2021). Latest conflicts, frequent droughts, and water scarcity in Nangarhar further damaged the agricultural sector and reduced yields. The lack of credit and financial support traps many farmers in a cycle of low investment and productivity. Improving access to agricultural finance and credit is therefore critical to breaking this cycle and advancing rural development.

Agricultural finance encompasses the management of finances, services, and capital flows for agricultural production, processing, and marketing. It includes a range of financial products, such as credit, savings, insurance, and payment services, designed to meet the unique needs and risk profiles of agricultural activities (World Bank, 2018). Within this broader domain, agricultural credit stands out as a core component. Agricultural credit refers specifically to loans and lines of credit provided to farmers, agribusinesses, or rural entrepreneurs for agricultural purposes. Such credit can be short-term (for purchasing inputs such as seeds, fertilizers, and animal feed, or for covering expenses until harvest) or long-term (for investing in machinery, irrigation infrastructure, land improvements, or storage facilities) (World Bank, 2020; FAO, 2020).

Access to financial services enables farmers to make better use of resources such as fertilizers, pesticides, irrigation, machinery, and equipment, thereby supporting high-value production, crop diversification, and improved marketing and transportation of products. Access to credit plays a crucial role in boosting agricultural productivity and reducing rural poverty by enabling farmers to invest in productivity-enhancing inputs (Sanka & Makhura, 2025; Ahmed & Ambinakudige, 2025). Agricultural credit is a vital component in modernizing agriculture and enhancing farm-level investment. Agricultural credit facilities enable smallholder farmers, who constitute a significant share of the rural poor, to purchase quality seeds, fertilizers, machinery, and other essential inputs, thereby increasing productivity and income (Iqbal et al., 2025).

Agricultural credit serves as a vital resource for farmers, enabling them to invest in essential inputs such as seeds, fertilizers, and modern farming equipment, which are crucial for increasing agricultural output and productivity (Rahman et al., 2022; Saqib et al., 2018). Access to credit is particularly significant for smallholder farmers, who often face challenges in

financing their agricultural activities due to limited resources and a high reliance on informal credit sources (Kehinde et al., 2026; Chandio et al., 2021).

Despite the key role of agricultural credit, particularly in developing countries, farmers' access, especially for small-scale farmers, remains limited, while demand for credit is high. Across developing countries, smallholders consistently report high demand for seasonal and investment credit, but formal supply rarely matches this need (Rahman et al., 2022). Furthermore, Khan et al. (2024) and Asante-Addo et al. (2017) highlighted that a significant percentage of farmers need agricultural credit to finance their operations, with studies indicating that a substantial proportion of smallholder farmers rely on credit to meet their agricultural needs.

Similarly, Kumar and Gupta (2019) observed that many farmers in developing economies face acute credit constraints. In Pakistan, their study revealed that only 27% of farmers accessed formal credit sources, highlighting the glaring financial exclusion within rural communities. Osei et al. (2023) found that households with limited incomes rely heavily on credit to meet production and consumption needs, underscoring the role of microcredit in agricultural development.

Access to agricultural credit is pivotal for enhancing farm productivity, enabling investments in seeds, fertilizers, machinery, and irrigation systems. In Afghanistan, including Nangarhar, where informal credit sources such as moneylenders and shopkeepers dominate rural finance, formal credit mechanisms are essential for sustainable growth. Informal loans often come with exorbitant interest rates and exploitative terms, trapping borrowers in cycles of poverty (Moahid & Maharjan, 2021). Formal credit, conversely, offers structured repayment and lower costs, promoting long-term agricultural development.

In response to these gaps, the Afghan government and international partners have established institutions such as the Agricultural Development Fund (ADF), established in 2010 under the Ministry of Agriculture, Irrigation, and Livestock (MAIL). The ADF operates as a wholesale lender, channeling funds through financial intermediaries to provide credit for agricultural activities across provinces, including Nangarhar, with a focus on value chain enhancements and productivity improvements. Despite these efforts, the ADF's outreach is limited by stringent collateral requirements and a focus on larger agribusinesses, often excluding small-scale farmers in remote areas (Rahmani et al., 2026).

However, credit services remain limited, and only a small portion of farmers have access to agricultural credit. Based on official information obtained for this study, three formal credit sources exist in Nangarhar province. The first group includes government non-banking institutions, especially for the agricultural sector: the Agricultural Development Fund (ADF), Advance Corporate Financing, and a new institution established at the end of 2025 called HASIL, which provides small-scale agricultural credit to farmers and agribusinesses. The second category comprises microfinance institutions organized by MISFA, such as First Micro Finance Bank, Mutahid, and Oxus Afghanistan. The third group includes government and private banks such as Bank-e-Millie Afghan, Afghanistan International Bank, Afghan United Bank, Afghan Islamic Bank, Pashtany Bank, and Ghazanfar Bank. The second and third groups advance general credit to the agriculture and non-agriculture sectors. In this situation, it is

essential to evaluate the real level of agricultural credit demand, as well as the credit amount, structure, and farmer preferences. This study focused on these objectives:

- To assess the level of farmers' demand for agricultural credit and its structure in Nangarhar Province.
- To identify the amount of credit needed by farmers and farmers' preferred repayment method in the study area.

Methods and Materials

This part includes the study area, sampling technique, sampling procedure, and analytical tools.

Study Area

The study was conducted in Nangarhar Province, in eastern Afghanistan. Nangarhar Province covers approximately 7,641 square kilometers at an average elevation of 599 meters above sea level. The province has an estimated population of approximately 1.8 million, making it the third most populous province in the country after Kabul and Herat. About 17% of the population resides in urban areas, while the remaining 83% live in rural communities. With an estimated population density of 227 persons per square kilometer, Nangarhar ranks second only to Kabul in terms of demographic concentration. Nangarhar contributes substantially to Afghanistan's national agricultural output, producing approximately 3.6% of wheat, 13.8% of maize, 12% of rice, 15% of soybeans, 8.7% of peaches, 5.5% of onions, and more than half of the country's citrus fruits (NSIA, 2024). These contributions highlight the province's critical role in national food security, employment generation, and rural income support. Agriculture remains the backbone of the provincial economy and a major source of livelihoods. Nearly 44% of the population is directly engaged in farming and livestock rearing, which remains their primary source of income and subsistence (Socioeconomic Profile of Nangarhar Province, 2019). Beyond serving local markets, Nangarhar also supplies agricultural commodities and services to neighboring provinces, including Kabul, Laghman, Kunar, and Nuristan, reinforcing its strategic importance in regional agricultural development and trade integration.

Sampling Technique

A cross-sectional survey design was used because data were collected at a single point in time. Since the exact number of smallholder and medium-scale farmers in Nangarhar is not documented, Cochran's (1977) formula for estimating the sample size for unknown populations was applied to determine the appropriate sample size. Based on this calculation, a total of 240 farmers were selected, with one missing, at a 95% confidence level and a 6.3% margin of error.

$$n_0 = \frac{z^2 \cdot p \cdot q}{e^2} \quad (I)$$

Where, n_0 = Required sample size, z = Z Score (Standard normal deviate 1.96 for 95% confidence level), p = Estimated proportion of the population with the attribute (commonly 0.5 if unknown, since it maximizes sample size) $q = 1 - p$, e = Margin of error.

$$n_0 = \frac{(1.96)^2 \cdot (0.5) \cdot (0.5)}{(0.063)^2} = 241$$

Sampling Procedure

A multistage design (district → village → household) was applied. Nangarhar has 22 districts. At the first stage, to capture geographic and socioeconomic heterogeneity, ten districts were selected in two steps:

1. Purposive coverage of provincial quadrants and center: Khogyani (west), Ghanikhel (east), Kama (north), Rodat (south), and Behsud (central).
2. Additionally, five districts were selected randomly: Haska Mina, Kot, Momandara, Goshta, and Khiwa.

Within each selected district, villages were randomly sampled, and farm households were randomly selected from village rosters within each sampled village. The required sample size was calculated as 241 households. For operational convenience and to ensure equal representation across the 10 selected districts, the sample size was set at 240 households. Consequently, 24 households were selected from each district ($240/10 = 24$). Equal allocation was employed because reliable data on the number of farmers in each district were not available.

Survey Instrument

The instrument used in the study was as follows:

- **Questionnaire:** A structured questionnaire was administered face-to-face by the researcher and trained enumerators after informed consent. Modules covered demographics, land/assets, production, extension, credit demand, amount of credit, repayment method, and other variables.
- **Pilot Testing:** A pilot survey was implemented to test question clarity, flow, timing, and skip patterns. The pilot included cognitive probing to verify understanding of key terms, reliability checks for multi-item sections, and timing of the interview.

Data Analysis

The level of farmers' credit demand, amount of demand, and repayment method were measured using descriptive statistical techniques, which provide a clear and systematic understanding of the distribution and magnitude of credit needs within the study population.

Software: KoboToolbox was used for data collection, and SPSS (version 25) for statistical analysis.

Findings

This section presents the study's findings: the level of credit demand, the magnitude of credit, farmers' preferred credit resource choice, repayment method, and the availability of collateral, particularly *qabāla* (land title deeds). Before the study findings, the section starts with an explanation of the socioeconomic characteristics of the 240 surveyed farmers in Nangarhar Province, providing the baseline information necessary for understanding.

Socioeconomic Characteristics of Respondents

Table 1 presents the socioeconomic profile of the respondents, including age, education, land size, family annual income, and family members. In part A, the age distribution shows that most respondents were between 31 and 45 years (43.7%) and 46 and 60 years (31.2%). This indicates a predominantly prime-age farming population, well-positioned for labor-intensive activities and potentially responsive to agricultural credit programs. In part B, educational attainment is heterogeneous: 36.6% of farmers were illiterate, while 58.6% had at least some formal schooling, including 18.75% with higher education. In part C, household size shows that the majority (72%) report having 6-15 members. Large family sizes reflect traditional extended household structures in rural Afghanistan.

Table 1. Socioeconomic Characteristics of Respondents

Table 1. Socio-demographic characteristics of the study population					
A	Age (years)		16-30	51	21.25
			31-45	105	43.75
			46-60	75	31.25
			Over 60	9	3.75
B	Education		Illiterate	88	36.66
			Primary Education	46	19.17
			High School	50	20.83
			Higher Education	45	18.75
			Religious Education	11	4.59
C	Family members		≤5	29	12.08
			6–10	86	35.83
			11–15	87	36.25
			16–20	19	7.91
			≥21	19	7.91
D	Annual family income (AFN)		≤50,000	70	29.16
			50,001–100,000	97	40.42
			100,001–150,000	43	17.91
			150,001–200,000	13	5.41
			200,001–250,000	10	4.17
			Above 250,000	7	2.92
E	Agricultural land size (jeribs)		≤5	183	76.25
			6–10	42	17.50
			11–15	6	2.50
			16–20	7	2.92
			>20	2	0.83
Total of each part			240	100.00	

Note. Each part's percentage is calculated separately from 100%.

Part D shows the annual family income, and the results indicate that a substantial proportion of respondents fall into lower-income categories. Households earning AFN 50,000 or less per year account for 29.16% of the sample. This finding suggests that a considerable number of

farming households operate under limited financial resources, which may constrain their production decisions and reliance on self-financing. The largest share of respondents falls within the AFN 50,001–100,000 income category, representing 40.42%. Together with the lowest income group, these two categories comprise most of the sample, indicating that most respondents are low- to lower-middle-income households. This income structure reflects the economic vulnerability commonly observed among smallholder farmers.

Part E, Landholding patterns confirmed the dominance of small-scale farming; nearly 76% of households owned ≤ 5 jerib, while only 0.8% cultivated more than 20 jerib. Such small farm sizes highlight the prevalence of subsistence agriculture and suggest collateral constraints that may hinder access to formal loans.

Together, these indicators revealed a sample dominated by smallholders with modest incomes and large families. Such conditions are closely linked with high liquidity needs, low productivity, limited borrowing capacity, and seasonality in cash flows.

Beyond household size, the study explores whether families have access to non-agricultural income sources as a strategy to support household welfare. Table 2 below illustrates that 47% reported having non-agricultural income sources, while 52.7% relied exclusively on farming. The presence of diversified income streams may enhance creditworthiness for some households, while dependence solely on agriculture underscores vulnerability to shocks.

Table 2. Access to other sources of income with agriculture

	Category	Frequency	Percentage
Having another source of income from agriculture	Yes	113	47.08
	No	127	52.92
	Total	240	100.00

Another key issue is access to extension services and participation in farmer organizations, which play a vital role in shaping knowledge, decision-making, and willingness to engage with formal credit. The findings illustrated in Figure 1 below indicate significant institutional shortcomings in the support systems available to farmers in Nangarhar. Only 13% of respondents reported receiving agricultural extension services, indicating limited institutionalization of knowledge transfer and technical advisory programs. Insufficient extension coverage restricts farmers' access to improved production techniques, better input management practices, and systematic farm planning—factors essential to enhancing productivity and using credit effectively.

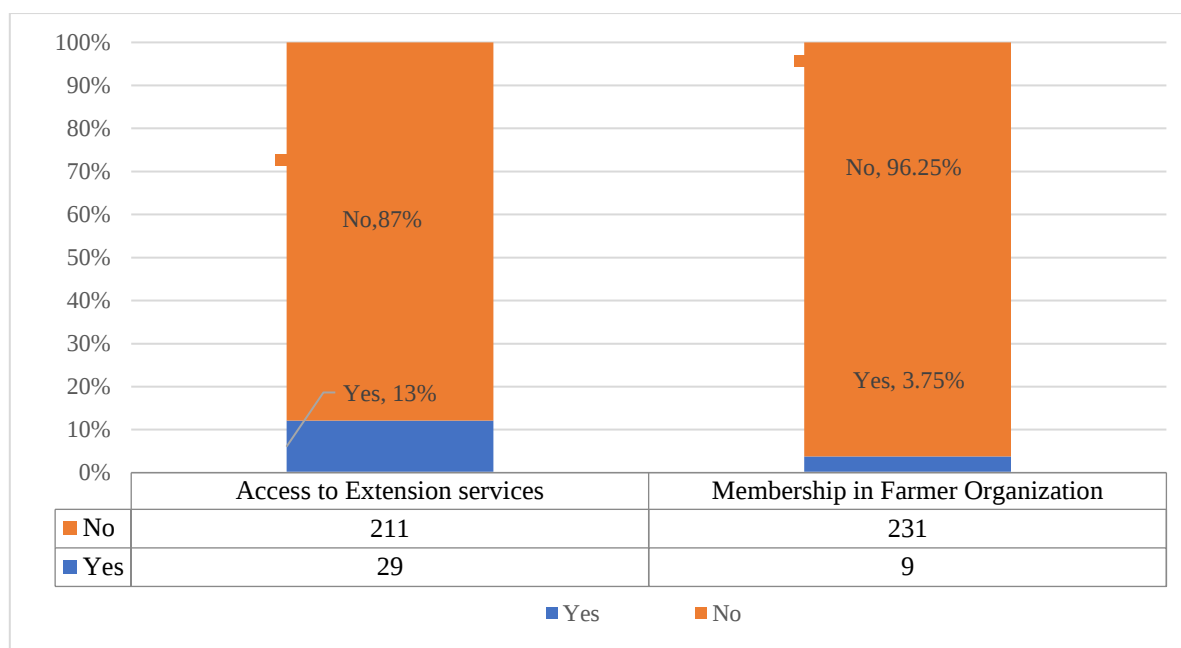


Figure 1. Access to extension services and membership in farmer organizations

Likewise, membership in farmer organizations was relatively low: only 3.75% reported membership, reflecting the absence of strong collective structures among rural producers. Limited participation in these groups, therefore, diminishes farmers' opportunities to engage in group-based lending schemes and undermines their ability to secure more favorable credit terms. These gaps, taken together, highlight the structural disadvantages many smallholders face when seeking to access the formal financial sector.

Following this discussion on institutional participation and access to advisory services, it is also crucial to examine farmers' awareness of formal agricultural credit. The information presented in Table 3 highlights a significant knowledge gap regarding formal agricultural credit among farmers in Nangarhar. Only 11.25% of respondents reported familiarity with formal credit sources, whereas the vast majority (88.75%) lacked such awareness. This limited understanding suggests that institutional lending channels remain largely inaccessible to rural communities, partly due to weak financial outreach efforts, insufficient engagement with extension services, and low levels of financial literacy.

Table 3. Knowledge about Formal Agricultural Credit and Use of Agricultural Credit in the Last Year

	Response	Frequency	Percentage
Knowledge about formal agricultural credit	Yes	27	11.25
	No	213	88.75
	Total	240	100%

After reviewing respondents' demographic, socioeconomic, and institutional characteristics, the next step is to identify how many farmers actively seek credit and how strongly they perceive demand for it.

As presented in Table 4, an overwhelming majority of farmers in Nangarhar—217 out of 240 respondents (90.42%)—reported having a demand for agricultural credit. This exceptionally

high level of expressed demand highlights the central role that credit plays in supporting farm operations, purchasing inputs, and managing household liquidity. Only 9.58% of respondents reported no current demand, indicating no financial need.

Table 4. *Farmers' Demand for Agricultural Credit and Intensity of Farmers' Demand*

	Response	Frequency	Percentage
Demand for Agricultural Credit	Yes	217	90.42
	No	23	9.58
	Total	240	100%
If Yes (Intensity of Demand)	Very high demand	87	40.09
	High demand	82	37.79
	Demand (moderate)	48	22.12
	Total	217	100.00

Among those expressing demand, the intensity of credit need varies notably. 40.0% characterized their demand as very high, 37.7% as high, and 22.1% as moderate. This distribution shows that nearly 4 out of every 5 smallholder farmers view credit not as an optional resource but as an essential component for sustaining agricultural activities. The strong demand likely reflects rising production costs, inadequate household savings, and restricted access to affordable financing.

The concentration of farmers within the high and very high demand categories further points to a substantial liquidity gap in the rural economy. Smallholders typically experience seasonal expenditure peaks—especially for seeds, fertilizers, and irrigation—without matching cash inflows. In such situations, credit functions as a crucial tool for bridging short-term financial shortfalls.

While the previous section analyzed the level and intensity of farmers' credit demand, it is equally vital to understand which sources farmers prefer for loans. Preferences for credit sources reflect perceptions of accessibility, trust, and procedural convenience, which influence borrowing behavior. Figure 2 illustrates farmers' first-choice preferred sources of agricultural credit. Government sources dominate farmers' credit preferences, accounting for 62.5% of first-choice responses. This strong preference reflects farmers' reliance on government-supported credit programs, which are often perceived as more accessible, affordable, and aligned with agricultural production cycles.

Farmers' organizations rank second among preferred sources, with 19.6% of respondents selecting them as their first choice. In contrast, informal credit sources account for 14.6%, suggesting that while informal lenders remain relevant, particularly where formal access is constrained, their role as a first-choice option is comparatively limited. Notably, commercial banks are the least preferred source, with only 3.3% of farmers identifying them as their first choice. This low preference likely reflects barriers such as limited awareness and misunderstanding about banking services among farmers and rural people.

From a broader perspective, these findings highlight a structural gap in formal financial inclusion, where government-led credit schemes compensate for weaknesses in commercial banking services in rural areas. While government credit plays a crucial stabilizing role, heavy dependence on it may raise concerns about sustainability and scalability.

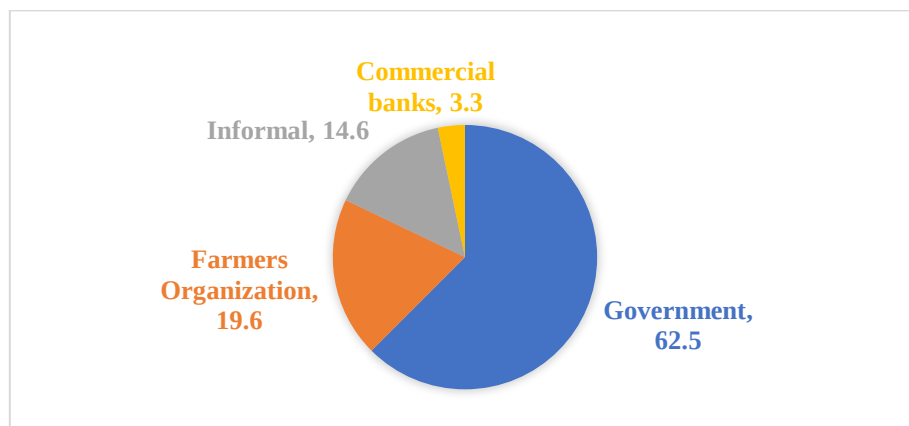


Figure 2. Farmers' First-choice Preferred Source of Agricultural Credit

Note. Informal = relatives & friends + neighbors + local traders & shopkeepers

After source selection, it is also important to examine farmers' expectations regarding how access to credit would influence agricultural productivity. These expectations reflect perceived benefits and signal farmers' confidence in credit as a catalyst for improved output. Figure 3 shows that many credit-demanding farmers in Nangarhar believe that access to agricultural credit would lead to significant increases in their production levels.

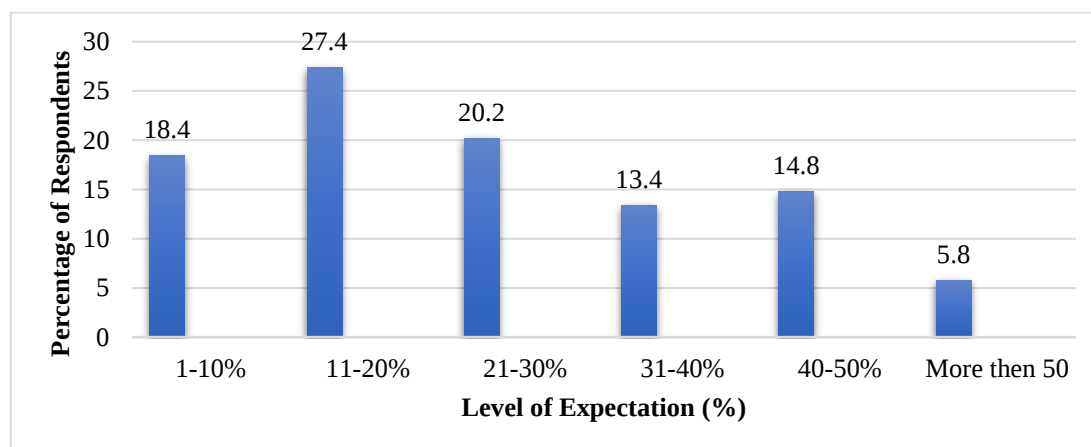


Figure 3. Expected Production Increase if Credit Is Provided to Demanders

This expectation reflects a strong perceived connection between financial access and productivity gains. At the same time, such expectations may be somewhat overstated due to limited financial literacy or an incomplete understanding of credit-related costs. In settings where formal credit opportunities have historically been limited, farmers often idealize the benefits of credit, assuming immediate productivity gains while underestimating factors such as repayment obligations, input price volatility, and market risks.

In a nutshell, Figure 3 shows that farmers view credit as a crucial tool for agricultural development. However, maximizing its development impact will require complementary

investments in knowledge transfer, improved input distribution, and effective risk-management mechanisms.

Beyond identifying whether farmers demand agricultural credit, it is equally important to assess the loan sizes required to maintain or expand their operations. Understanding the distribution of loan demand provides insight into the scale of financial needs and the suitability of different lending products. Table 5, therefore, presents the annual loan amounts requested by the 90% of respondents who expressed a demand for agricultural credit. Most farmers in Nangarhar prefer relatively small loan amounts, consistent with their limited operational scale and income capacity.

Table 5. *Amount of Loan Demand per Year among Farmers*

Loan range (AFN)	Frequency (n)	Percentage
≤100,000	95	43.78
100,001–200,000	78	35.95
200,001–300,000	12	5.53
300,001–400,000	9	4.15
400,001–500,000	10	4.60
>500,000	13	5.99
Total	217	100.00

Note. The loan range is based on responses from 217 farmers who reported demand for agricultural credit.

Nearly 44% of respondents requested loans of 100,000 AFN or less, while another 35.9% sought between 100,001 and 200,000 AFN. Together, these two categories account for almost four-fifths (79.7%) of total demand, underscoring that many farmers require modest credit packages suited to short-term production or input purchases. Only a small proportion of respondents expressed demand for larger loans. About 5.5% requested between 200,001 and 300,000 AFN, and a similar share requested amounts exceeding 500,000 AFN. These cases likely represent better-off or more commercially oriented farmers with diversified income sources or larger landholdings. The limited representation of high-value loan seekers indicates that most farmers remain financially constrained and risk-averse, preferring to borrow smaller amounts that align with their repayment capacity.

The observed pattern also highlights a structural challenge in rural finance: most formal lending institutions prioritize larger loans to reduce transaction costs, whereas smallholders primarily seek micro-scale financing. Bridging this mismatch requires flexible credit schemes that offer smaller, short-term, and low-collateral loans with simplified procedures. Moreover, linking credit amounts to farm size and seasonal cash flows could enhance both accessibility and repayment reliability. Tailored financial products targeting these lower brackets would likely attract more borrowers, strengthen financial inclusion, and promote sustainable rural development.

In addition, since most formal credit resources require valid collateral (qabāla, property titles) as their basic criteria, it is essential to assess farmers' ability to meet the fundamental requirements of formal financial institutions. The results presented in Table 6 indicate that only

39.17% of farmers in Nangarhar possess a valid formal collateral document, while the remaining 60.83% lack legally recognized ownership papers. This highlights one of the most substantial institutional barriers to accessing formal credit: the lack of formally registered property that can serve as loan security. In Afghanistan, land documentation systems often remain fragmented, inconsistent, and in some cases incomplete, leaving many farmers unable to prove ownership despite long-term possession or inheritance.

Table 6. *Possession of Formal Collateral Documents*

	Response	Frequency	Percentage
Having a valid collateral	Yes	94	39.17
	No	146	60.83
	Total	240	100.00

Note: The collateral, or qabala, refers to an officially recognized and government-registered ownership deed (commonly known as the shari qabala in Afghanistan). The applicant must hold the ownership document in their own name, or, if the property is jointly owned or the registered owner is deceased, must obtain a formal power of attorney from all co-owners or legal heirs who share ownership rights. These are among the essential requirements set by the Agricultural Development Fund (ADF) for obtaining agricultural credit.

The fact that most farmers lack collateral documents means that a large share of potential borrowers is effectively excluded from formal lending programs offered by banks and development institutions. As a result, many smallholders are compelled to rely on informal lenders or family networks, where trust, familiarity, and social capital serve as substitutes for formal collateral. This challenge extends beyond credit access and has broader implications for agricultural development. The inability to offer collateral not only limits borrowing opportunities but also discourages long-term investment in land improvement, mechanization, and other capital-intensive activities.

Another key point is the structure and timing of repayment, which greatly influence farmers' willingness to engage with formal agricultural credit. Understanding these preferences helps ensure that loan products are aligned with farmers' income flows, production cycles, and risk exposure.

The findings presented in Table 7 below indicate a strong preference among farmers in Nangarhar for installment-based repayment systems.

Table 7. *Repayment Method Preferences*

	Categories	Frequency	Percentage %
Repayment method	Installment payments	196	90.32
	Lump-sum cash repayment	21	9.68
Repayment schedule	Seasonal	159	73.28
	Yearly	30	13.82
	Monthly	28	12.90
	Total	217	100.00

Note. The repayment method and schedule were reported by the 217 respondents who expressed demand for agricultural credit and are presented in Table 4.

A large majority (89.68%) favored periodic installment payments, while only 10.32% preferred lump-sum repayment. This clear preference reflects the financial realities of smallholder agriculture: farmers generate income gradually over the production cycle, making installment repayments more manageable and less burdensome. Installment plans also enable borrowers to match repayments with harvest-related cash flows, thereby reducing default risks and encouraging more consistent financial discipline.

Regarding repayment schedules, most respondents (73.0%) preferred seasonal repayment, while 13.9% favored yearly repayment and 13.0% preferred monthly repayment. The dominant preference for seasonal repayment underscores the close link between credit obligations and agricultural production cycles. Seasonal repayment aligns naturally with farmers' income patterns, which typically peak during harvest periods. Monthly or annual repayment structures, by contrast, may not fit well with the irregular and crop-dependent cash flows of smallholders.

These patterns hold important implications for the design of agricultural credit programs. Financial institutions that impose rigid or frequent repayment schedules may unintentionally discourage participation or elevate the risk of repayment challenges. Providing flexible, seasonally adapted repayment options could significantly improve farmers' willingness to borrow and enhance the sustainability of agriculture-focused lending initiatives.

Discussion

Across the entire province, the total supply of agricultural credit remains extremely limited. Based on official information obtained for this study, fewer than 200 agribusinesses and farmers have received loans from formal sources.

According to the provincial Department of Agriculture (2024), Nangarhar's farming population comprises more than 50,000 households. It becomes clear that fewer than 200 individuals have accessed formal agricultural credit. This situation reveals a profound mismatch between supply and demand in the agricultural credit market: actual credit coverage remains below 1%. While the study indicated that an overwhelming majority of farmers in Nangarhar (90.42%) reported a demand for agricultural credit, 40.0% characterized their need as very high, 37.7% as high, and 22.1% as moderate. This distribution shows that nearly 4 out of every 5 smallholder farmers view credit not as an optional resource but as an essential component for sustaining agricultural activities. The strong demand likely reflects rising production costs, inadequate household savings, and restricted access to affordable financing.

Despite the high demand, farmers prefer formal credit; 62.5% of respondents indicated government sources as their first choice. This strong preference reflects farmers' reliance on government-supported credit programs, which are often perceived as more accessible, affordable, and aligned with agricultural production cycles. The extremely high demand observed in this study closely aligns with evidence from Afghanistan and other developing countries. Moahid & Maharjan (2021) reported that most Afghan smallholders consistently express a strong willingness to borrow due to persistent liquidity shortages and limited access to working capital. Similarly, national-level data from FAO (2024) indicate that 84% of rural households in Afghanistan require cash assistance for agricultural and livelihood needs, demonstrating a widespread shortage of financial resources. These patterns are also echoed in

studies from Bangladesh, Pakistan, and Ghana, where 60–70% of farmers reported unmet demand for agricultural credit (Khatun, 2019; Saqib et al., 2018; Frempong et al., 2022).

A key point expressed by the study is a significant knowledge gap regarding formal agricultural credit among farmers in Nangarhar. Only 11.25% of respondents reported familiarity with formal credit sources, whereas the vast majority (88.75%) lacked such awareness. This limited understanding suggests that institutional lending channels remain largely inaccessible to rural communities, partly due to weak financial outreach efforts, insufficient engagement with extension services, and low levels of financial literacy. The low awareness result aligns with international studies; Kamugisha et al. (2025) and Balana and Oyeyemi (2022) noted that information gaps remain one of the most significant barriers preventing rural households from accessing financial services. Limited awareness of available credit options may also push farmers toward informal lenders who, while more accessible, often impose restrictive or costly borrowing conditions.

Additionally, the results showed that most farmers (79.8%) in Nangarhar prefer relatively small loan amounts ($\leq 200,000$ AFN), consistent with their limited operational scale and income capacity, suggesting a mismatch between smallholders' needs and the lending practices of formal institutions, which often prioritize larger loans. The observed pattern also highlights a structural challenge in rural finance: most formal lending institutions prioritize larger loans to reduce transaction costs, whereas smallholders primarily seek micro-scale financing. Bridging this mismatch requires flexible credit schemes that offer smaller, short-term, and low-collateral loans with simplified procedures. Moreover, linking credit amounts to farm size and seasonal cash flows could enhance both accessibility and repayment reliability. These findings emphasize that the demand for agricultural credit in Nangarhar is high but largely concentrated in the microloan range. Tailored financial products targeting these lower brackets would likely attract more borrowers, strengthen financial inclusion, and promote sustainable rural development.

The requirement for valid collateral (*qabāla*) is another major obstacle to obtaining formal credit. The study's results indicate that only 39.17% of farmers in Nangarhar possess formal collateral documents, while the remaining 60.83% lack legally recognized ownership documents. The absence of formally registered property that can be used as loan security highlights one of the most substantial institutional barriers to accessing formal credit. In Afghanistan, land documentation systems often remain fragmented, inconsistent, and in some cases incomplete, leaving many farmers unable to prove ownership despite long-term possession or inheritance.

The inability to offer collateral not only limits borrowing opportunities but also discourages long-term investment in land improvement, mechanization, and other capital-intensive activities. Policy initiatives aimed at improving land registration systems, issuing simplified ownership certificates, or developing group-based collateral mechanisms could, therefore, play a transformative role in strengthening financial inclusion.

Regional, national, and international studies further support this scenario. For example, Rahmani et al. (2026) in Nangarhar and Moahid et al. (2021) at the national level examined that complex loan procedures and the absence of acceptable collateral are the most commonly

cited constraints among Afghan farmers and borrowers. Studies from Ghana, Nigeria, and Iran also highlighted that the lack of land titles or formal collateral excludes many smallholders (Kamugisha et al., 2025; Alhassan et al., 2020; Darvishi et al., 2024).

Regarding repayment methods, the findings indicate a strong preference among farmers in Nangarhar for installment-based repayment systems. A large majority (89.68%) favored periodic installment payments, while only 10.32% preferred lump-sum repayment. Regarding repayment schedules, most respondents (73.0%) preferred seasonal repayment, while 13.9% favored yearly repayment and 13.0% preferred monthly repayment. The dominant preference for seasonal repayment underscores the close link between credit obligations and agricultural production cycles. Seasonal repayment aligns naturally with farmers' income patterns, which typically peak during harvest periods. Monthly or annual repayment structures, by contrast, may not fit well with the irregular and crop-dependent cash flows of smallholders.

The findings reaffirm that credit demand is highly sensitive to the structure of loan products. As highlighted by Moahid et al. (2021), Afghan farmers strongly prefer seasonal or biannual repayment schedules, flexible collateral requirements, and service points that are locally accessible. International literature further supports this argument; seasonal repayment options and simplified loan procedures significantly increase credit uptake in countries such as Indonesia, Tanzania, and Bangladesh (Haryanto et al., 2023; Yeasmin, 2024).

Conclusion

Overall, these findings indicate that agricultural credit serves not merely as a supplementary financial option but as a foundational requirement for the sustainability and growth of smallholder agriculture in Nangarhar. The findings demonstrate that demand is nearly universal, with over 90.42% of respondents expressing a demand for credit, and a majority reporting high or very high intensity of demand, highlighting an urgent need for inclusive, accessible, and Sharia-compliant credit mechanisms tailored to the constraints of small-scale farmers.

Despite this overwhelming demand, formal credit utilization remains extremely limited, while more than 62.5% of farmers selected government credit sources as their first choice. Such a stark disparity underscores a critical structural gap within the rural finance system and represents a major barrier to agricultural development, inclusive rural growth, and poverty reduction in Nangarhar.

The study also reported low awareness about formal credit: only 11.25% of respondents were familiar with formal credit sources, whereas the vast majority (88.75%) lacked such awareness. The results showed that most farmers (79.8%) prefer relatively small loan amounts ($\leq 200,000$ AFN), consistent with their limited operational scale and income capacity, suggesting a mismatch between smallholders' needs and the lending practices of formal institutions, which often prioritize larger loans.

The absence of valid collateral is another obstacle to obtaining formal credit—only 39.17% of farmers in Nangarhar possess formal collateral documents, while the remaining 60.83% lack legally recognized ownership papers. Logistic regression analysis revealed that universal

demand led to quasi-complete separation, underscoring that structural necessity, rather than demographic variation, drives credit demand in this context. Respondents prefer installment-based and seasonal repayment systems, with 73.0% preferring seasonal repayment.

Recommendations

Based on the findings, several recommendations are proposed for financial institutions and development partners:

- The results of the study indicated that most of the farmers expressed demand for agricultural credit, while the financial services provided by formal sources remain limited. Therefore, it is recommended that formal financial sources expand the outreach of their agricultural credit services to the district level to improve access for a larger number of agricultural enterprises, farmers, and rural beneficiaries across the province.
- Introduce Collateral Alternatives: since most farmers lack formal land titles, it is better to promote collateral-free lending models such as group lending, movable asset recognition, or state-backed guarantee schemes.
- Prioritize Small-Ticket, Input-Focused Loans; financial products should emphasize short-term working capital loans with simplified procedures. Gradual expansion to investment loans for machinery, irrigation, and infrastructure can be introduced as institutional capacity strengthens.
- It is also recommended to design seasonal, flexible repayment schedules and align repayment cycles with harvest periods to reduce repayment stress and improve sustainability.

Author Contributions

- Naeemullah Rahmani conceptualized and designed the study, collected the data, performed the statistical analyses, interpreted the findings, and wrote the original manuscript.
- Hamidullah Younisi provided scientific supervision, technical guidance, and academic support throughout the research process.
- Abdulwadood Nori contributed to manuscript writing, organization, and formatting of the content.
- Mohammad Sadiq Naseri collaborated in manuscript revision and addressed the reviewers' comments and suggestions.
- All authors reviewed and approved the final version of the manuscript.

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