#### 論説 Article

## The Role of Credit Obtained from Input Suppliers in Farm Investment in Afghanistan

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**Abstract**: Access to improved technologies largely depends on the availability of credit. Access to formal credit is shallow in Afghanistan, and the farmers mostly rely on the informal credit. Input supplier credit is one of the informal sources of credit available to the farmers. Using qualitative data from the interviews of 23 farmers and 10 input suppliers from three cities of Afghanistan, this study aims to analyze the role of the credit obtained from input suppliers in farm investment, the reasons for obtaining and giving credit, and the problems faced. The study also analyzes the advantages the input suppliers have over financial institutions. The credit was provided in-kind, which is acceptable to the farmers as it complies with Islamic doctrines of finance. The credit reduced the risk of underinvesting in production. However, it did not help in acquiring capital goods and long-term investment. The credit was mainly based on good rapport. The short repayment period and the lack of transparency were the challenges faced by the farmers. Input suppliers gave credit mainly to expand their businesses. Default and currency risk were the main problems they faced. In lending to farmers, input suppliers had advantages over financial institutions in acquiring information, controlling borrowers, and in the social acceptance of the credit they disbursed. The study also suggests suitable policies to increase access to formal credit for farm investment in Afghanistan.

Key words: input supplier, informal credit, Islamic finance, Afghanistan

#### I Introduction

Afghanistan is a least developed country. Agriculture has a vital role in its economy. For example, its share is 23% in its gross domestic product (GDP). It is the source of income for 44% of the household (Central Statistics Organization, 2018). However, the high population growth in the country is contributing to unemployment. The agriculture sector has the potential to create jobs for the increasing population in the country (World Bank, 2014). Nevertheless, 9.6% of the agriculture land is left fallow due to the lack of access to capital (Central Statistics Organization, 2018). Besides, the application level of the inputs is low; for example, the application of fertilizer was only on average 28.07 kgs per hectare in 2012, which was very low compared to our neighboring countries. It was 111 kgs per hectare in Pakistan in the same year (Indexmundi, n.d.). The low application of improved inputs causes low productivity in the agriculture sector (Omobowalie et al., 2009). Access to improved inputs mostly depends on credit. Agricultural credit is crucial for agriculture production (Castro and Teixeira, 2012). It increases the income of the farmers (Foltz, 2004). It is also a valuable tool to improve welfare (Reyes and Lensink, 2010). Low access to credit is a significant problem in developing countries for rural people (Sacerdoti, 2005). The low access to credit by farmers remains a significant barrier in their production, which disrupts procuring improved inputs (Tadesse, 2014).

There are two sources of credit for farmers in Afghanistan, formal and informal. The former comes from the state-recognized financial institutions e.g., commercial banks, microfinance institutions, NGOs, and credit unions in Afghanistan, which established after the establishment of the new government in 2002. Their coverage is meager. For instance, the number of active microfinance borrowers for agricultural activities was only around 37,000 in 2018 (MISFA, 2018). This is probably due to the poor resource endowment of the farmers, the high cost of lending in the farming sector,

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lack of financial awareness, and insecurity. As per Sacerdoti (2005), the transaction cost in the developing countries for rural credit is highly due to the small loan size, sizeable geographical spread, heterogeneity of the borrowers, and lack of branches of the financial institutions in the rural areas. Therefore, the informal credit remains the main provider of credit for farmers. As per the findings of NRVA (2005), 42% of the households have taken a loan from informal credit sources in the rural areas of Afghanistan.

Atieno (2001) defines informal credit as a loan arrangement that takes place outside the bylaw of a stateauthorized body. In Afghanistan, informal credit is the loan agreement usually between people who know each other. The contracts are typically based on the verbal or written document, not recognized by any state-accredited body. There are many sources for informal credit for farmers in Afghanistan, such as traders, relatives, friends, neighbors, property mortgagers, and input suppliers. Among them, input suppliers are one of the primary sources for credit in the country. Holle (2017) documents that the input suppliers are the primary source of credit to farmers who can overcome main restrictions in lending to farmers, such as high operating costs, lack of client information, and risk associated with agricultural activities.

Despite the efforts of the government and the donor's organization after 2002 to transform the agriculture sector in the country, improved inputs such as seeds, fertilizer, feed, chemicals, and so forth, are not accessed by farmers with desired quality and quantity (Sarhadi et al., 2014). Singh (2008) emphases that the availability of agricultural inputs is inexorable for rural development. They support agriculture production, which is the source of income for a large portion of the rural people. According to Das et al. (2009), for agriculture production and productivity, a continual supply of inputs is required. Input suppliers have a critical role in the distribution of the critical inputs making them readily available in cash and credit to the farmers in Afghanistan. According to Olomola (2014), agricultural input suppliers are engaged in the procurement and distribution of inputs, and they provide in-kind credit. In Afghanistan, input suppliers are the importers, traders, wholesalers, and retailers that exist in the agricultural inputs' markets of the main cities and some district markets. Most of the farmers in Afghanistan do not have a regular income and become seasonally short of cash. Input suppliers allow them to purchase their inputs and pay for them at a later date when they acquire cash. The repayment for input suppliers' credit is usually made after the harvest. Aside from this, input suppliers also provide technical advice. Maina and Gowland-Mwangi (2011) documents that input suppliers provide agricultural information to the farmers, and they also have a role in technology adoption.

Earlier to 1980, the public sector in the country was mostly managing the inputs distribution system, seed variety development, importing, production, and marketing of inputs. Two agricultural conglomerates, the Baghlan sugar company, and the Spinzar company were also extending credit to farmers in the form of physical inputs such as seed, fertilizer, and chemicals (Norvell, 1972). Norvell (1972) also states that the shopkeepers were also extending credit in-kind to farmers. The new government in 2002 started with the economic liberalization policies, which were meant to pave the way for a market-based economy (Fishstein and Edries, 2015). Many private companies and input suppliers entered the agriculture input supply market. Besides, the development of the agricultural sector increased the demand for agricultural inputs. These two resulted in the development of agricultural inputs' market.

Similar to other types of credit, the input suppliers' credit has two dimensions, the supply side, and the demand side. The supply-side relates to the decisions of input suppliers in extending credit, for instance, the terms and conditions they put to their borrowers. The demand side is related to the farmers who decide to borrow. The current studies on input suppliers' credit examined this type of credit either from the supply side or from the demand side. This study takes both aspects into account. According to Awunyo-Vitor (2018), while exploring access to credit, both supply and demand sides should be examined. Examining both dimensions is also important because very little is known about the input suppliers in Afghanistan, particularly about the credit they provide. They are one of the essential sources of informal credit for farmers. However, to the extent of our knowledge, no specific study analyzes their role in the credit provision in the country.

Given this background, this study is an attempt to analyze the role of the credit availed from input suppliers

in farm investment, the reasons for entering into input suppliers' credit, the problems faced by the farmers and by the input suppliers. Using the transaction costs theory of trade credit developed by Schwartz (1974), the study also analyzes the advantages of input suppliers over the financial institutions in extending credit. The study suggests effective policies to increase farmers' access to agricultural inputs through formal credit.

#### II Methodology

The study adopts qualitative approaches to explore the credit provided by the input suppliers in Afghanistan. The qualitative approach is needed for this study because very little is known about the credit from input suppliers in Afghanistan. This approach allows us to learn in detail about the experiences of both input suppliers and those farmers who obtained input suppliers' credit. To collect data for the study, we interviewed 23 farmers in the three districts of Afghanistan, namely Behsood, Paghman, and Balkh districts through stratified random sampling. Nine farmers were from Behsood, 7 farmers from Paghman, and 7 farmers from Balkh districts. These districts are in the three different regions of the country, northern, central, and eastern regions. The list of questions used in interviewing farmers includes both open and closed

questions. Therefore, besides the in-depth analysis through a qualitative approach, in analyzing the collected data, descriptive statistics such as averages, percentages, and ratios were also worked out. The open questions were asked to assess the farmers' attitude towards the credit and to analyze the problems in obtaining credit. To know the role of input suppliers and to understand them as credit providers, it is also essential to understand the whole business of input suppliers. For this purpose, three input suppliers from Kabul, four from Jalalabad, and three from Mazar-i-sharif agricultural inputs markets were purposefully selected and interviewed. In this study, the suppliers of seed, fertilizer, and pesticides are regarded as crop production input suppliers and the suppliers of poultry inputs as poultry farming input suppliers. Information regarding their business and the provision of credit was collected through open questions. Figure 1 shows the study area.

To analyze the advantages of input suppliers over financial institutions, transaction costs theory of trade credit, which is an economic model developed by Schwartz (1974), was used. This theory explains trade credit and the advantages of suppliers over financial institutions in lending to firms. The theory is explained in detail in the results and discussion part. Moreover, the

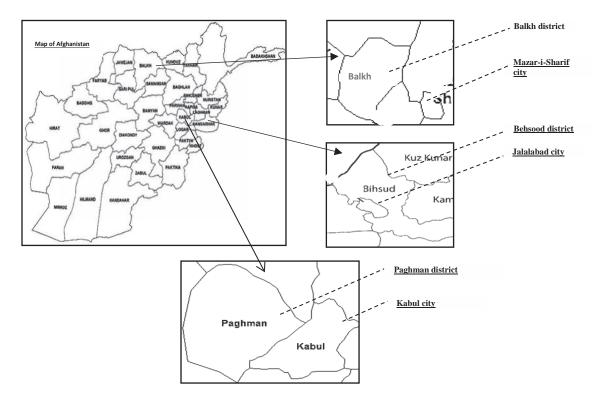


Figure 1 Study area

relevant literature on input suppliers' finance and trade credit has also been reviewed.

The credit provided by the input suppliers had an implicit interest, which was the mark-up price for the borrowers. This implicit interest rate charged by the input suppliers does not resemble the conventional interest rate of the banks. To convert it into the annual interest rate, the sale price (the price in which the inputs were given in credit) and the market price of the same inputs were taken into account. The following formula was used:

 $\mathbf{r} = [(P_s - P_m)/P_m] * 100 \dots (1)$ 

 $P_s$ = price in which the inputs are sold in credit to the farmers,  $P_m$ = market price of the same inputs, r=the periodic interest rate

The interest rates of the credit were converted to the annual interest rate (ra) using the following formula:

Annual interest rate:  $ra = r^{*}12/n....(2)$ 

ra = annual interest rate, n=number of months

#### III Results and discussion

#### 1 The agricultural input supplying businesses

The input suppliers in all three cities were importers, wholesalers, traders, and retailers who supply different types of inputs to the farming sector. Among the 10 interviewed input suppliers, six were supplying inputs for crop production, three for poultry farming, and one was supplying irrigation equipment. They supply both imported and domestically produced inputs. However, the imported inputs dominated the supplied inputs. The inputs were either directly imported from different countries such as Holland, Turkey, India, China, Pakistan, etc., or were purchased from other importers, traders, and wholesalers. The input suppliers purchased feed for poultry farming solely from domestic factories. Some equipment such as feeders, drinkers, and trays for poultry farming was also mostly purchased from domestic factories. Only one supplier (IS08) has his packaging plant. He imports pesticides in bulk and repacks it in his plant. The importers don't only sell to the wholesalers; instead, they also function in the market as wholesalers and retailers. The domestic producers and manufacturers supply to the farmers through wholesalers and retailers. Figure 2 shows the distribution channel of the inputs.

The poultry input suppliers are comparatively new in Afghanistan. Owing to the recent development of the poultry sector, most of them started and expanded their businesses in the past 10 years. However, the input suppliers of crop production had a more extended history in their business (Table 1). The total amount invested by different input suppliers ranges from 1 million to 90 million Afghanis<sup>1)</sup>. The total invested amount of the input suppliers who function only as retailers was less comparing to those with multiple functions, i.e., the input suppliers who were at the same time importer, wholesaler, and retailer. Although the total invested amount in the case of the input suppliers for crop production is high, the total credit disbursed to the total asset ratio is higher in

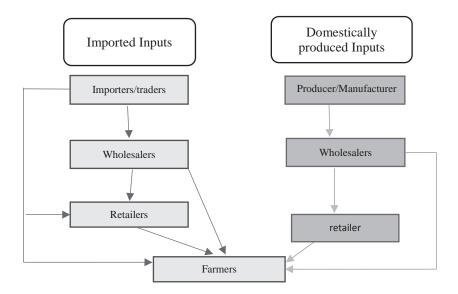


Figure 2 The distribution channels of the agricultural inputs supplied Source: Author's own, based on the interviews, 2019.

the case of poultry input suppliers. This shows that the credit dominates the transactions of poultry input suppliers.

Aside from supplying inputs in cash and credit to the farmers, the suppliers also render some other services. For example, the poultry farming input suppliers render veterinary services, training in vaccination, medication, biosecurity, and farm management to the farmers. They also help them in marketing. The input suppliers of seed and pesticides educate farmers on how to use the inputs. According to Maina and Gowland-Mwangi (2011), input suppliers are a suitable source to farmers for learning, which also contributes to the adoption of technology. The input suppliers for the poultry value chain either hired a veterinary doctor or refer their customers to a veterinary doctor. The suppliers gave the fee to the veterinary doctor. Table 1 reveals the establishment date of the businesses, the amount invested, the amount disbursed as credit, and the services rendered.

The input suppliers of crop production were giving inputs in credit to those they already know as trustworthy customers or to those who were referred as reliable borrowers by a trustable third party such as other input suppliers or the traders of agricultural commodities. However, to obtain inputs on credit from the poultry farming input suppliers, besides the requirement mentioned above, a farmer should own a farm or should have rented a farm for a long time. They should have a

| Input<br>suppliers | Year of the<br>business<br>started | Inputs and services supplied  | Type of business                      | Amount<br>invested in<br>the business | Amount of<br>inputs sold in<br>credit<br>(AFN) |
|--------------------|------------------------------------|---|---------------------------------------|---------------------------------------|--|
| IS01               | 2007                               | Supplying pesticides, and seed.<br>Information about the usage.   | Retailer                              | 1 million                             | 400,000  |
| IS02               | 1969                               | Supplying seed, pesticides, veterinary medicines,<br>equipment.<br>Information about the usage, greenhouses<br>installation services, drip irrigation installation<br>services. | Importer, wholesaler, and retailer    | 90 million                            | 2 million                                      |
| IS03               | 2012                               | Supplying all the inputs which are needed in poultry farming.<br>Veterinary services, Trainings in poultry raising.   | Importer and retailer                 | 31 million                            | 15.6 million                                   |
| IS04               | 2013                               | Supply day-old- chicks.   | Wholesaler and retailer               | 23.6 million                          | 11.5 million                                   |
| IS05               | 1969                               | Supplying fertilizer.   | Retailer                              | 7 million                             | 1 million                                      |
| IS06               | 2013                               | Supplying all the inputs which are needed in poultry<br>farming.<br>Provide veterinary services, and training<br>in farm management.  | Retailer                              | 7.5 million                           | 4.5 million                                    |
| IS07               | 1999                               | Supplying feed, medicines, and equipment for<br>poultry farming.<br>Veterinary services, training in feeding.   | Retailer                              | 7 million                             | 2.4 million                                    |
| IS08               | 1968                               | Supply seed, pesticides, equipment, and fertilizer.<br>Information about usage.   | Importer, retailer,<br>and wholesaler | 78 million                            | 1 million                                      |
| IS09               | 2012                               | Supplying irrigation equipment, solar panel, water<br>pumps.<br>Installation and maintenance services.  | Wholesaler and retailer               | 32 million                            | 5 million                                      |
| IS10               | 2005                               | Supplying pesticides, fertilizer, equipment and seed.<br>Usage information.   | Retailer                              | 2.5 million                           | 650,000  |

Table 1 Information about the businesses of the interviewed input suppliers

Note: \*1 USD = 69.30 AFN on 2018/08/20.

Source: Interviews, 2019.

good credit record with the input suppliers, or any trusted third party should refer him. The crop production input suppliers also prefer to lend to the farmers who live in the nearby districts. Crop production input suppliers who are at the same time importers, wholesalers, and retailers prefer lending to the larger farmers or to their loyal customers. They state that earlier, they would lend to any type of farmers, but due to a large amount of unpaid debt they encountered in the last few years, they are now lending to either their loyal customers or to the large farmers. Their unpaid debt mainly constituted small loans.

#### 2 Credit obtained from the input suppliers

The farmers who obtained credit from input suppliers were crop farmers, poultry farmers, and those farmers who obtained credit for both crop farming and livestock activities. Crop farmers were growing various types of crops, such as cereal crops, vegetables, and fruits. They were mostly small-scale farmers cultivating land less than one hectare.

The poultry sub-sector has recently grown in Afghanistan. Poultry farms exist by a small and medium scale in the rural and urban areas in Afghanistan. The country is 80% self-sufficient in the sector (MAIL, 2017). Poultry farmers in the study area were raising broiler and layer. Their total flock ranges from 500 chicks to 5,000 chicks. The amount of money obtained by them is higher because raising poultry for commercial purposes requires much cost. For instance, as per the respondents, the cost for one broiler chick is between 110 and 140 Afghanis in 45 days. That is why poultry farmers need more money to invest compared to the small-scale crop farmers. Three farmers took credit for both crops and cattle raising. They borrowed medicines for their cattle. Farmers raise cattle mostly along with their farming activities in Afghanistan. The amount of credit specifically for cattle raising, was minimal. Therefore, this study does not discuss it in detail.

Table 2 reveals that the average amount of credit availed by crop farmers from the input suppliers were 15,560 Afghanis, poultry farmers 55,680.7 Afghanis, and those farmers who borrowed for both crops and livestock activities were 12,724.7 Afghanis. The average amount borrowed by all farmers were 22,167 Afghanis. Those who borrowed for crops make almost 70% of all the farmers. Those who solely borrowed for their poultry farming were only 17.4%.

|                     | Average amount (AFN) |                   |                |  |
|---------------------|----------------------|-------------------|----------------|--|
| Farming activities  | Average<br>(AFN)     | No. of<br>farmers | Percentage (%) |  |
| Crops               | 15,560.0             | 16                | 69.56          |  |
| Livestock           | 55,680.7             | 4                 | 17.40          |  |
| Crops and livestock | 12,724.7             | 3                 | 13.04          |  |
| All farmers         | 22,167.0             | 23                | 100.00         |  |

Table 2The average amount of credit obtained by<br/>farmers from input suppliers

Source: Survey, 2019.

The average years for the crop farmers borrowing from the input suppliers is 11.3 compared to 3.7 for poultry farmers, and the average of the cycles of credit received by the crop farmers is 9.2 compared to 11.9 in the case of poultry farmers. The credit repayment period is only 4.2 months in the case of crop farmers and only 2.1 months in case of poultry raisers. The average years the crop farmers are borrowing from the suppliers is higher compared to the others, which is because the poultry value chain has recently grown in the country (Table 3). However, the number of cycles of the credit availed is higher in the case of the livestock farmers. The number of poultry production periods was from 5 to 7 in a year. It was from 1 to 3 in the case of crop farmers.

Table 3 Credit obtained from input suppliers

| Average years  | Crop<br>farmers | Poultry<br>farmers | Livestock<br>and crop<br>farmers |
|--|-----------------|--------------------|----------------------------------|
| Average years borrowing<br>from input suppliers<br>(years) | 11.3            | 3.7                | 10.9                             |
| Number of cycles credit obtained                           | 9.2             | 11.9               | 11.5                             |
| Repayment period<br>(months)                               | 4.2             | 2.1                | 3.9                              |

Source: Survey, 2019.

#### 3 Inputs obtained by farmers

Table 4 reveals the percentage of farmers who borrowed various inputs from the input suppliers. The percentages of those farmers who borrowed seed, fertilizer, pesticides, equipment, feed, medicine, vaccines, and day-old-chicks are 52.2%, 39.1%, 39.1%, 30.4%, 26.1%, 26.1%, and 13.0% respectively. The inputs borrowed were of two types i.e., consumable inputs and durable inputs. As depicted in Figure 2, the consumable inputs borrowed by the crop farmers were fertilizer, pesticides, and seed. The consumable inputs borrowed by livestock farmers were feed, medicines, day-old-chicks, and vaccines. The durable inputs borrowed from the input suppliers were equipment such as spraying machines, water pumps, solar panels, plow, and so forth. Solar panels and water pumps are obtained to fetch underground water. Livestock farmers also borrowed durable equipment such as feeders, drinkers, watering pipes, and thermometers.

The consumable inputs dominate the borrowed inputs. Consumable inputs are the commonly used agriculture inputs consumed by crops and livestock, while the durable inputs sometimes also called the capital inputs are the inputs not directly consumed by crops and livestock, which sometimes include advanced mechanical and technological inputs (Das et al., 2009). Only seven farmers acquired durable inputs from the input suppliers. Costly capital inputs such as tractors, threshers, etc., were not found to be acquired in credit from input suppliers by the farmers. Input suppliers in Afghanistan may not afford

| No. | Type of input                    | No. of<br>farmers | Percentage<br>(%) |
|-----|----------------------------------|-------------------|-------------------|
| 1   | Seed                             | 12                | 52.2              |
| 2   | Pesticides                       | 9                 | 39.1              |
| 3   | Fertilizer                       | 9                 | 39.1              |
| 4   | Equipment                        | 7                 | 30.4              |
| 5   | Veterinary medicine and vaccines | 6                 | 26.1              |
| 6   | Feed                             | 6                 | 26.1              |
| 7   | Day-old chicks                   | 3                 | 13.0              |

 Table 4
 Utilization of credit by different informal credit users\*

Note: \*Multiple answers.

Source: Survey, 2019.

lending costly inputs to the farmers through highly unsecured informal credit contracts. Farmers' default in the costly capital inputs can affect their businesses to a high degree. On the other hand, it may also be difficult for farmers to borrow capital goods individually. Mostly consumable and cheaper inputs are lent, which are necessary for the day-to-day activities in farming. WOCCU (2003) documents that the in-kind credit for farmers provided by input suppliers and traders is not given for the procurement of durable assets, availing property, and starting a new farming activity (Figure 3).

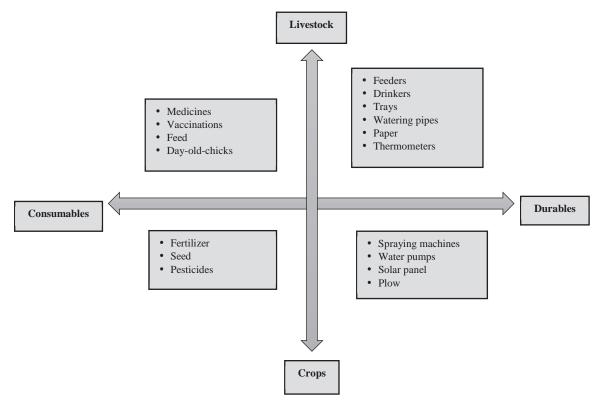


Figure 3 The inputs availed by the farmers in credit from the input suppliers Source: Author's own, based on the interviews, 2019.

#### 4 Why farmers borrow from input suppliers

Increase production and easiness in obtaining was the two main reasons provided by most of the farmers (82.6%) and (78.3%) respectively. 15% of the farmers mentioned that it was without interest. 65.2% said that no collateral is required. Only 26.1% of farmers stated that they acquired credit to undertake new income-generating activities, i.e., crop diversification. It seems that the credit helped farmers to procure the necessary inputs to increase production. Having access to fertilizer, seed, and pesticides increases their production. All the poultry farmers mentioned that the primary purpose of availing credit from the input suppliers was to expand their existing farming activities.

The farmers go for this type of credit at the time they are cashless and in need of applying inputs. Most of the farmers in Afghanistan do not have a regular income and become seasonally short of cash. The farmers usually repay to input suppliers after harvest. Input suppliers allow them to purchase their necessary inputs and pay for them at a later date when they acquire cash.

The credit was easy to obtain by the farmers as it did not need any collateral and tedious formality. According to Adera (1995), the farmers who don't have collateral are regarded as uncreditworthy by the banks. However, taking credit from input suppliers doesn't require any collateral and formality procedures (Irfan et al., 1999). Suppliers use personal contacts and existing trading relationships as a substitute for collateral (Pearce, 2003). It also often does not require a guarantor. Only 4 out of 23 farmers provided guarantors to the input suppliers. Seven farmers stated that their friends and relatives introduced them to the input suppliers as reliable farmers worthy of lending. The other farmers were the long-term loyal customers of the input suppliers and did not provide any collateral or guarantors. They also did not need to be referred to by any third party. Providing inputs in credit is mostly a trust-based transaction. Input suppliers generally extend credit without any written agreement. To keep a record for the credit, they only write it in a borrowers' register book. Among the suppliers, only one input supplier (IS03) located in Kabul takes personnel collateral, a promissory note in which the borrowers commit not to default. The borrowers have to sign or put their stamp on the note.

The recovery of credit is usually smooth. Farmers,

because of both their close contacts with the input suppliers and given their future needs for credit, tend to return the credit well in time. Though, in the case of crop failure or production loss, which has been the case for some farmers, repayment was very difficult. The other important reason was that the credit was interest (usury) free. The business transactions which involve interest (usury) are prohibited in Islam (Wajid and Kaleem, 2009). It is mentioned in the Quran, the holy book of Muslims, that the interest is prohibited (Qur'an, 2:275). Most of the people in Afghanistan are conservative Muslims. Input suppliers' credit is akin to the Islamic financial product, Musawamah, which is allowed in Islam. In Islamic finance, Musawamah (also called Elmusawamah) is a contract in which a buyer and a seller can bargain for the price of a particular commodity, and a seller is not compelled to reveal to a buyer the purchase price of a specific commodity paid by him (Ashraf et al., n.d.). Musawamah can be both in cash and in credit. Some Islamic banks also use this type of financial product with a deferred payment sale (Paul and Osmond, 2016). When the sale is done with differed payment, it is called Musawamah credit, which is practiced as an informal credit in Afghanistan. As it is not interest-based financing and is allowed in Islam, probably this is the reason that the farmers' satisfaction level in obtaining this type of informal credit is higher than the interest-based credit obtained from banks. Table 5 depicts the reasons of farmers for obtaining in-kind inputs from input suppliers.

 Table 5
 Reasons provided by the farmers in taking credit

| Reasons   | No. of<br>farmers | Percentage (%) |
|---|-------------------|----------------|
| Increase production and expand farming activity | 19                | 82.6           |
| Easy to obtain                                  | 18                | 78.3           |
| It was without interest                         | 15                | 65.2           |
| No collateral required                          | 12                | 52.2           |
| Undertaking a new farming activity              | 6                 | 26.1           |
| Save money                                      | 6                 | 26.1           |
| Loan size                                       | 6                 | 26.1           |

Source: Survey, 2019.

#### 5 Why input suppliers provide credit

The input suppliers provided many reasons for giving inputs on credit to their customers. It is a way to

expand their businesses, retain their customers, increase sales, and earn more money. Some crops input suppliers also considered it a social obligation towards their needy relatives and friends. However, none of the poultry farming input suppliers expressed that they are giving credit to help people.

Sanctioning credit generates income from the related implicit interest gained from the mark-up price on loan transactions. In this way, it covers the cost of their credit as input suppliers themselves buy on credit from other traders, input suppliers, and from the factories which function inside the country. The inputs which are directly imported by the suppliers are paid in cash. Aside from the reasons mentioned earlier for sanctioning credit to the farmers by input suppliers, the main reason provided by all the input suppliers is that the farmers do not have sufficient cash to invest. They only have money when they get their harvest. If they do not obtain credit, they invest less, which results in a decrease in the sale. Therefore, sanctioning loans is also a way to increase sales for the input suppliers.

#### 6 Problems in input supplier's credit

As shown in Table 6, most farmers stated that the high prices for their inputs and the short repayment period were the main problems faced by them in availing credit from input suppliers. 39.1% of farmers stated that they couldn't repay on time. 39.1% of farmers reported that they are compelled to sell products at low prices to return the credit.

Table 6Problems faced by farmers in availing inputs in<br/>credit from input suppliers\*

| Problems                                       | No. of<br>farmers | Percentage<br>(%) |
|--|-------------------|-------------------|
| Quality of the inputs borrowed is low          | 9                 | 39.1              |
| High prices for the inputs                     | 18                | 78.3              |
| Cannot repay on time                           | 9                 | 39.1              |
| Compel to sell products in low prices          | 9                 | 39.1              |
| Short repayment time                           | 17                | 73.9              |
| Until the loan is repaid, I will be in tension | 6                 | 26.1              |
| Inadequate inputs                              | 9                 | 39.1              |

Note: \*Multiple answers. Source: Survey, 2019.

In the credit transactions, to have more margin, the suppliers try to provide low-quality inputs, which are difficult for them to sell it in cash. 39.1% of the farmers stated the low quality of inputs as a problem. They complained that the labels on the bottles of pesticides were fake. They could not bargain more about the quality and price because, in that case, the supplier would cancel credit. The suppliers incur an implicit margin as a markup price to the price of the inputs. The cash price of the different pesticides is usually much lower than the credit. The average annual interest rate for the borrowed pesticides was 62.9%. As per the input suppliers, for cash transactions, they sell in a very less margin in the hope of increasing profit through increased sales. The quality of those pesticides that are sold in credit is poor. According to some farmers, pesticides purchased in credit contains only half of the recommended dose. It means that lowquality pesticide is available on a very high price to the farmers, which signals exploitation. Irfan et al. (1999) found a 5% interest rate per month for pesticides in Punjab state of Pakistan. The case of fertilizer is different from the pesticides. If fertilizer is sold in credit, only some money is charged extra on each bag of fertilizer. The average annual mark-up (implicit interest) on fertilizer was only 21.5%. There were a few brands of fertilizer available in the market. The fertilizer imported to Afghanistan is appropriately checked in the laboratories, as pointed out by a supplier of fertilizer in Jalalabad (IS-05). Therefore, the chance to sell low quality fertilizer at a high price is lesser compared to the pesticides.

The higher price for the inputs was also a significant problem for the poultry farmers. The price prevailed in the market for one bag of feed is 1,650 Afghanis. As per the input suppliers, they would sell it at 1,800 Afghanis if the sale is in credit. Generally, the annual interest rate is lesser in case of the inputs availed for crop farming than the inputs for poultry farming, as depicted in Table 7. This may be because of the higher risk which exists in the poultry farming. The interviewed poultry farmers were raising poultry in open sheds, which were prone to diseases. If the farmers are in loss, the input suppliers have no way but to extend the loan until the farmers can find money and repay it. Unlike moneylenders and conventional financial institutions, who charge compound interest rates after the due date, input dealers usually wait for the next crop to recover their loans without increasing

their interest. The high mark-up in the case of poultry farmers may also be because the credit is an integral part of the day-to-day business in the poultry value chain. As shown in Table 1, a more substantial portion of the poultry input suppliers' business assets is given in credit. Therefore, they care more about price discrimination. While the credit transactions do not dominate the businesses of the input suppliers, who provide credit in kind to the crop farmers, a smaller portion of the business assets constitutes credit disbursed to farmers by them. Therefore, they don't care much about the mark-up price. They also provide credit only to help farmers in which they don't increase the price for the credit transactions. Sometimes farmers who are the loyal customers, friends, and relatives buy inputs, and after the negotiations for the prices are done, they tell the suppliers that the money is given at a later date, so there is no chance to increase the price.

Therefore, input suppliers' mark-up on inputs depends on the risk associated with the farming, type of the product, and the status of association between the borrowers and the input suppliers. In the case of crop farming input suppliers, it is highly likely that the price of an input sold on credit varies substantially among borrowers and for different types of inputs. This is similar to the price discrimination theory for trade credit offered by Petersen and Rajan (1996). They explain that there is high price elasticity in case of the risky borrowers, offering credit results in a profit for the suppliers, and the higher the supplier's profit margin, the more likely the suppliers are to offer credit.

 Table 7
 Implicit annual interest rate for the different inputs obtained in credit from input suppliers

| Type of inputs                   | Implicit interest rate |
|----------------------------------|------------------------|
| Pesticides                       | 62.9                   |
| Veterinary medicine and vaccines | 61.8                   |
| Day-old chicks                   | 59.1                   |
| Feed                             | 54.5                   |
| Seed                             | 37.6                   |
| Equipment                        | 30.1                   |
| Fertilizer                       | 21.5                   |

Source: survey, 2019.

73.9 % of the farmers provided the short repayment period of the credit as a problem. It shows that the credit

of input suppliers is only a short-term seasonal credit. This finding is similar to Pearce (2003), who documents that the suppliers provide a limited variety of financial services that are dominated by seasonal and short-term credit. The farmers who borrowed fertilizer complained that the suppliers of fertilizer even don't wait until the harvest. They repay the amount monthly from the sources other than farming. The suppliers of fertilizer stated that the fertilizer could be quickly sold in cash. Its prices are known to every farmer. They can't sell it at a significantly high price even if the transaction is in credit. They are in a loss if they sell it in credit. They have a very less margin in this. All the poultry farmers expressed that upon the completion of the production period, the suppliers call them for the repayment. They even visit their farms to remind them of the repayment. Sometimes the poultry farmers are compelled to sell the produce at low prices to repay the loan as soon as possible.

However, unlike poultry farming input suppliers, the input suppliers of crop production rarely visit the borrower farms. As discussed in subsection 2, the average amount of inputs provided in credit by the input suppliers of poultry farming is higher; therefore, they want to be more connected and involved in their customers' business. A farm visit is done by the poultry farming input suppliers to understand the farmers' repaying capacity, to capture crucial first-hand information from the borrowers, and recover the credit. The farm visit was done through the experienced staff of the input supplying businesses.

Thirteen farmers stated that they repay on time, while the others stated that they had trouble in repaying on time. The main reason for not repaying on time was the low harvest and the low prices for the product. If the farmers do not repay on time, they won't be granted credit next time by the input supplier. The poultry farmers told that if they don't repay on time, their reputation in the whole inputs market decrease, as the input supplier informs other suppliers. The source of repayment for the credit is the farming activities of the farmers. However, non-farm activities such as masonry works and shop keeping were the other sources reported. If the farmers don't repay on time, they are not obliged to pay any penalty. Charging penalty was considered usury, forbidden in Islam by both the input suppliers and the farmers. Therefore, it doesn't exist in this type of informal credit. It can be concluded that although the repayment is flexible, there is a fear of cutting off the future credit for farmers, so they usually don' default.

#### 7 Problems faced by the input suppliers

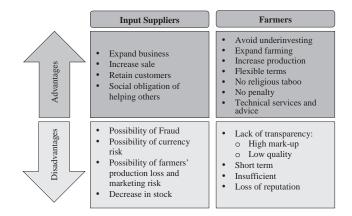
The problems faced by the input suppliers were the crop failure and production loss of the borrowers, fraud, not having enough assets, currency depreciation, and lack of support from legal departments. Agriculture is a risky venture in Afghanistan. There is a high chance of crop failure, diseases, and market risk; also, weather influences productivity (World Bank, 2018). The sale prices fluctuate and are difficult to predict at the time of crop plantation. If productivity is lower than expected, farmers may not be able to repay loans. Agricultural yields are generally uncertain. If the farmers face loss in their farming, then the suppliers can do nothing but to reschedule their credit. Every supplier had a record of the farmers who took credit and never repaid.

Two input suppliers told that some of their borrowers provided excuses for the loss. But later, they got to know that they were lying as they withdrew money from their farms and invested elsewhere. If any farmer becomes defaulter, if the money is not of a significant amount, the only thing the suppliers would do is to recall the farmers about the repayment. If he continues not to repay, the supplier threat him for cutting off the future credit. If the lent inputs are of considerable value, the crop farming suppliers told that they complain to the district office. However, the district offices usually do not support them in credit recovery. They said that the district officers even blame the suppliers for sanctioning credit to the farmers. In a rare case, the district officers summon the borrowers to pressurize them for repayment. If the input suppliers understand that their money is in trouble, they take other input suppliers with themselves and visit the defaulter place to put pressure on him. In case of more considerable credit, in Jalalabad city, the suppliers call a Jirga. Jirga is the discussion in an assembly of people. This city mainly inhabits Pashtuns, an ethnic group in Afghanistan and Pakistan. Jirga reflects the process of the Pashtun tradition, where people gather and sit in a circle to resolve disputes and make joint decisions about the conflicts or issues (Wardak, n.d.)<sup>2)</sup>. If Jirga founds the farmers' default was because of production loss, then usually they reschedule the credit amount without any penalty. The decision of Jirga is written and should be

accepted and followed by both sides. Breaking Jirga's decision is considered immoral in society. Difficulty in credit recovery through legal departments indicates the weakness of law enforcement in Afghanistan. According to Jansson et al. (2013), in a situation where law enforcement is weak, financial institutions hesitate to sanctions credit, which increases the reliance on informal credit.

The input suppliers' credit also carries currency risk or foreign exchange risk, which is due to the fluctuation in the currency. This risk works in favor of farmers. The input suppliers who import inputs purchase inputs in cash. They pay US dollar to buy inputs. They sell their inputs in Afghanis in Kabul, and Mazar-i-Sharif. Afghani was comparatively stable in the past 18 years. However, the transactions are mostly in Pakistani Rupees in Jalalabad city. As per the poultry input suppliers, in May 2019, one USD was at 140 Rupees, but in July 2019, it reached 160 Rupees. They faced much loss in his credit transactions. Jalalabad city is in Nangarhar province, which has a border with Pakistan. The Torkham gate located on the border is twenty-four hours open for people to commute for trade, healthcare, and other purposes. The goods exported or imported to this province are usually transacted in Pakistani Rupees. The widespread use of Pakistani Rupees in Nangarhar province indicates the weaknesses of the regulatory authority for financial policy. The central bank is failed to prevent the usage of Pakistani Rupees in this province.

Apart from the above problems, six input suppliers expressed that they cannot reach to a more significant number of farmers because of not having enough money.



## Figure 4 Advantages and disadvantages of input suppliers' credit

Source: author's own, based on the interviews, 2019.

Extending credit decreases cash in hand and stock, which affects their businesses. The discussion of the reasons and problems shows that there are advantages and disadvantages to both input suppliers and farmers, which are summarized and shown in Figure 4.

# 8 Advantage of input suppliers over financial institutions in giving credit

It is essential to know the advantages of input suppliers over formal financial institutions in Afghanistan in extending credit to the farmers. It is crucial in designing effective policies for increasing access to formal credit by farmers. These advantages should be implanted into the possible extent of the policies. The advantages of input suppliers over other financial institutions are explained by the transaction costs theory of trade credit, which was first developed by Schwartz (1974) as an economic model describing trade credit. This theory surmises that suppliers may have advantages over financial institutions in assessing the repayment capacity and the financial capability of their borrowers. Suppliers have superior capability in monitoring and enforcing the repayment of credit over the financial institutions. Petersen and Rajan (1996) classified these advantages into three groups: information acquisition, controlling the buyers, and salvaging value from the existing assets. Suppliers can get information faster and cheaper in their day-to-day business regarding the borrowers' condition and business. For example, the suppliers visit the borrowers' business more often than financial institutions. The size of the borrowers' credit and the repayment period requested also give an idea to suppliers. Warning borrowers for cutting off the credit in the future in case of default is another advantage a supplier has over the financial institutions. However, this works well when there are few suppliers. In case of the default of borrowers, the suppliers can get the goods back. But this is truer for durable goods. Due to this, as Mian and Smith (1992) also state, durable goods can provide better collateral. Financial institutions may also seize the physical assets of their borrowers, however, at a high cost. Suppliers can also resell it easily comparing to the financial institutions.

Figure 5 shows the advantages of the input suppliers' credit over the formal credit in Afghanistan. The transaction costs theory of trade credit only explains the first three advantages. There is one more advantage, social acceptance, which is not considered in the original theory. As discussed in subsection 4, the input suppliers' credit is akin to one of the Islamic types of finance, Mussawamah. The farmers accept it well. The current financial services in Afghanistan are dominated by conventional interest-based finance, not complying with Islam. Therefore, input suppliers have an advantage over financial institutions in this regard. The input suppliers' advantages over financial institutions in the spheres of information acquisition, controlling the borrowers, and salvaging value from the existing assets were witnessed from the farmers and input suppliers' interviews and are depicted in Figure 5. They are individually discussed in the above subsections.

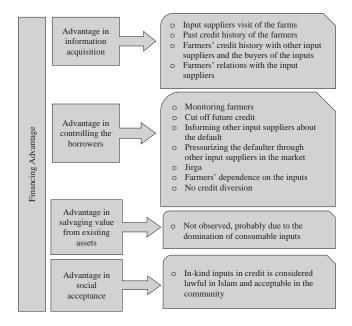


Figure 5 Advantages of input suppliers over financial institutions in extending credit to the farmers Source: author's own, based on the interviews, 2019.

#### **W** Conclusion and policy implications

In-kind credit obtained from input suppliers is one of the informal credit types to farmers in Afghanistan. Farmers mostly obtain this type of credit to increase production and to expand existing farming activities. Easiness in obtaining and being interest (usury) free were the other important reasons for obtaining this credit. Input suppliers provide credit, mostly for expanding their businesses, retaining their customers, and increasing sales profit. Generally, it appears that, to some extent, the credit availed from input suppliers meet the needs of farmers and avoid the risk of underinvesting. However, this type of credit is for short-term, with a limited scope, which is not for long-term investment. This credit also lacks transparency. The sale of low-quality inputs in credit and the high mark-up are the source of concern. Input suppliers also face problems in sanctioning credit to farmers. These problems are the crop failure and production loss, default, lack of enough assets to lend, currency depreciation, and lack of support from the legal departments.

Formal financial institutions can fulfill the financial needs of the farmers by increasing their reaching out to the farmers. According to Pearce (2003), compared to the suppliers' credit, financial institutions' credit, which is provided based on proper structures and processes have more transparency, can be accessed by a higher number of borrowers, and includes multiplicity in services. To stimulate farmers' confidence in formal credit and to increase their satisfaction level from using formal credit in Afghanistan, formal financial institutions must provide credit based on Islamic banking. Islamic banking includes a range of financial products. Murabaha is one of the Islamic financial products through which a bank sells goods in a deferred payment with a margin, which becomes the profit for the bank (Puspitasari et al., 2019). Puspitasari et al. (2019) also states that Murabaha is the most widely used financial product by Islamic banks in the world. Murabaha is slightly different from the Mussawamah, the Islamic financial product discussed in section 3. In Mussawamah, lenders do not necessarily reveal the purchase price to the borrowers. However, Murabaha emphasizes on revealing the purchase price of the commodity to the borrowers. Murabaha is used as a mode of financing, where the borrowers need to purchase some commodities (inputs). The borrower, expecting to obtain the Murabaha facility, identifies the inputs he requires to purchase through Murabaha contract. The financial institution purchases the inputs from the supplier. It then sells the same to the borrowers against an agreed price (including the revealed profit portion) on the deferred payment basis. It is widely practiced for agricultural purposes in some Muslim countries. Hassan et al. (2012) found that Murabaha increased asset ownership, yield and income of the farmers in Bahawalpur Pakistan. As per Puspitasari et al. (2019), in this contract, borrowers can obtain goods based on their requirements and needs. He also states that there is a sort of unambiguousness in Murabaha as the borrowers would know the purchase price of the commodities, and the margin added to the purchase price of a commodity.

Therefore, we prefer Murabaha over Mussawamah to the financial Institutions in Afghanistan while extending credit to the farmers. In Murabaha, a financial institution can purchase inputs from input suppliers as per the request of the borrowers. This links financial institutions to the input supplier. According to Pearce (2003), linking

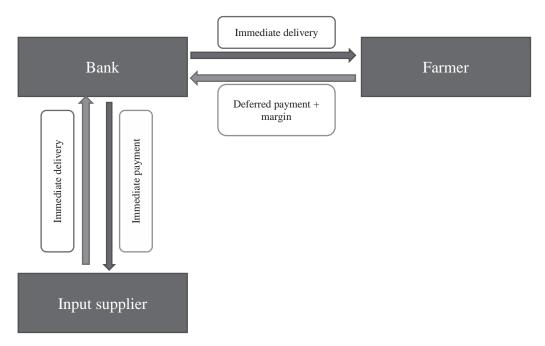


Figure 6 The proposed model of providing inputs in credit to the farmers Source: authors.

financial institutions with the input suppliers decrease the credit risk and the informational constraints to some extent. The model in figure 6 depicts how financial institutions in Afghanistan can lend inputs to the farmers through Murabaha Islamic contracts. This model incorporates many of the advantages that the input suppliers have over financial institutions in Afghanistan. For instance, this model is based on Islamic finance, which is acceptable by farmers in Afghanistan, this is credit in-kind, so the risk of credit diversion is lesser, it links financial institutions with the input suppliers. Furthermore, Murabaha is more transparent as the farmers would know the purchase price of the inputs.

Aside from the above model, large input suppliers can also establish their own financial companies in Afghanistan. The Government should provide a favorable policy environment. In this way, all the advantages of input suppliers over financial institutions are utilized. Financial institutions, primarily commercial banks, can play an indirect role in financing farmers. They can provide credit to the input suppliers' financial companies. As one of the constraints of input suppliers was the lack of sufficient assets to provide credit, they can obtain enormous credit from the commercial banks through their established companies. This enables them to outreach a more significant number of farmers. However, there is a need for quality control. The concerned authority should adequately check the inputs supplied by the input suppliers' financial institutions.

#### Notes

- 1) One US dollar was equal to 69.30 Afghanis on 2018/08/20.
- 2) According to Rafi (2002), in a Jirga, economic and social conflicts are solved through firm decisions. Jirga operates according to the principles of Pashtunwali, a code of conduct guiding all the aspects of Pashtun behavior which often replaces the laws of the central government. It usually includes local leaders, religious people, and the people whose profession is to resolve conflicts through Jirgas. They are called Jirgamars in local terms.

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