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Who is the "arthi": Understanding the commission agent's role in the agriculture supply chain

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Who is the "arthi": Understanding the commission agent's role in the agriculture supply chain

Findings from a Scoping Study in Pakistan's Punjab

A study by National Institute of Banking & Finance (NIBAF) & Pakistan Microfinance Network (PMN)

Funded through the International Growth Centre – Pakistan

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Executive Summary

Pakistan's agriculture sector forms the backbone of the economy, generating not only 21 percent of the GDP directly but also feeds large-scale industries such as textiles and agro-based SMEs. It accounted for 16.5 percent of country's exports in 2012 and employs 45 percent of the country's labor force. Yet, productivity indicators suggest that yields have stagnated over the past decade in most crops and the productivity gap with high performing countries is wide. There is also a clear mismatch between the level of real economic activity taking place in agriculture and flow of formal credit to the sector: in 2010-11, lending to agriculture sector made up only eight percent of the banking sector's total advances and 7.6 percent of private sector credit. Planning Commission estimates for 2011-12 show that demand for agriculture credit stands at PKR 750 billion whereas the flow to the sector stood at PKR 294 billion only (34 percent of total demand). This demand has been growing at a rate of 14.6 percent per annum over the past five years whereas actual disbursement has increased by only 8.6 percent, creating a widening supply-demand gap that is being met through informal sources.

In Punjab, the arthi remains the largest source of informal credit for agriculture. He successfully lends to the segment considered risky and not credit worthy by banks. Not only does he make money but also manages his risk well. In order to generate some outside-the-box thinking on the issue of linking banks to the small farmer, this scoping study take a close look at the arthi system in Punjab to understand the arthi's role in the agriculture supply chain by mapping his network and linkages, understanding his operations, finances (such as sources of funds, interest rates, costs and profits) and risk management techniques. Lessons from the arthi model are used to propose ideas for pilots and research that can break this apparent deadlock with regards to channeling institutional credit to agriculture in a profitable and sustainable manner.

Based on field interviews with arthis, wholesalers, input dealers and farmers, we find that arthis are not a uniform set but consist of different types offering a range of services depending upon the market they serve. However, commonly they operate out of the province's 325 commodity markets, which act as the central place where all players in the agriculture marketing chain interact. The arthi provides two major services to the farmer: firstly, he provides inputs on credit at the time of sowing of a particular crop and secondly, acts as the sale agent for the farmer and facilitates the sale of the harvested crop in the market. By taking advance from the arthi, the farmer is bound to sell his produce through the same arthi giving the arthi control over the farmer's cash flows. The rates charged by the arthi and his portfolio's risk profile demonstrate that there is money to be made in agriculture lending to small and medium farmers. With operational costs at less than 2.5 percent of total volume of lending, nominal write-offs and interest rates ranging between 62 percent and 80 percent, profit margins for the arthi are quite significant. In addition to earning from credit, the arthi also earns commission from the sale of the produce of his borrower, calculated as a percentage of the sale price of the produce ranging from 2 percent to 4 percent depending upon the crop and his terms with the client.

The arthi manages his risk well while providing a 'customized' service as opposed to the 'cookie cutter' approach of commercial banks. He does so by first identifying the right borrower and ascertaining his credit needs accurately, and finally controlling the farmer's cash flows by binding the farmer to sell the produce through him. On average, eight percent of the loans made by the arthi run into problems. Even these do not convert into defaults. The arthi is sensitive to the fact that in case the farmer is facing a crisis (due to crop failure or some personal circumstances, for example) the loan needs to be rolled over if he wants to ever see his money. Discussions with the farmers showed this was clearly a major differentiating factor between banks and arthis: while banks' processes push them to begin recoveries from farmers even in cases where there is no intentional default and classify loans as soon as repayments falter, arthis provide a customized service to the farmer. The arthi recovers what the farmer can give at the time, reschedules the outstanding amount and also extends a new loan to allow the farmer to plant his next crop.

The arthi thus makes unsecured loans to farmers that are well known to him or come through a personal reference. He does not rely on traditional collateral that the banks typically demand such as land titles. Relationship of a farmer with a particular arthi (and his family) can span generations: in our sample, on average, a farmer spent nearly 70 percent of his farming life with the same arthi. Awareness about banks, including specialized banks such as ZTBL, is quite high in the farming community (nearly all farmers interviewed had bank accounts) but most farmers continue to engage with arthis for reasons well knows (such as documentation requirements, collateral requirements, lack of appropriate products and threat of legal action in case of defaults).

These insights clearly show that the traditional banking model is far removed from the needs of the farmer and is not structured to be cost-effective. Although the arthis have mastered the art of lending to this market, they still encounter issues of scale, especially given the challenge they face is accessing banks for credit for on-lending. Demand for credit remains continuous and is growing with rising prices of agriculture inputs. To create a win-win, where farmers and banks both benefit, a model involving an 'intermediary' that incorporates the arthi's strategies needs to be tested. The 'intermediary' would connect the bank to the clients and play the role that the arthi plays, with value-added services (such as access to latest farming techniques, modern farm equipment, and inputs that can help increase yield and productivity). The intermediary, like the arthi, would help manage the bank's risk by a) identifying the right client b) correctly assessing his credit needs c) ensuring that loan proceeds are used for the intended purpose d) controlling the farmer's cash flows by managing his crop's sale proceeds. The intermediary's value-added service relating to farm efficiency and productivity would further reduce the credit risk. Insurance against catastrophic risks (such as floods or pest attacks) would need to be built into the model as these tend to be the only systemic threat. Possible intermediaries could be the arthi themselves, or private firms that provide these services. If success can be demonstrated, it can have tremendous implications in terms of not only attracting banks into mainstream rural finance but also spurring economic growth through higher productivity and efficient use of capital in the agriculture sector.

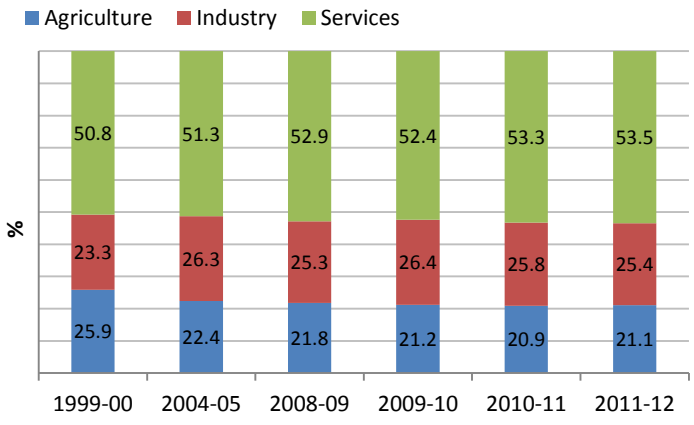
Recommendations for further research include:

- Research on the arthi and marketing system in other minor crops, fruit and vegetable markets as well as other provinces, especially Sindh
- Supply-side mapping of commercial banks that are strategically interested in this market and development of products for the target market
- Mapping of supply chains of agriculture produce to a) understand financing gaps for production and development purposes, and b) identify other bottlenecks which, if unresolved, would diminish any intervention on the financing front

1 Background and Introduction

Pakistan's economy remains hugely dependent on the agriculture sector and overall economic growth is directly related to the performance of the rural economy. According to the latest Economic Survey (2011-12) published by the Ministry of Finance, the sector contributes 21 percent to the country's GDP directly (see **Figure 1**) and accounts for 45 percent of the labor force. A look at the industrial base of the country shows that both large scale manufacturing and SME have deep links with the agriculture sector. For example, textiles – the largest industry accounting for 46 percent of the manufacturing sector alone – is directly connected to agriculture. Agriculture also contributes heavily towards Pakistan's exports, accounting for 16.5 percent in 2012. The government recognizes the sector for its "vital role in ensuring food security, generating overall economic growth, reducing poverty and the transforming towards industrialization".

Figure 1: Contribution of Agriculture to GDP



Source: Pakistan Economic Survey 2011-12

Provision and use of financial services is well recognized as a key catalyst for agricultural growth. The Economic Survey 2011-2012 recognizes that lack of access to agriculture credit can lead to "exploitation of poor farmers at the hand of informal sources of credit, to a slowdown in the adoption of modern farming techniques and inputs, resulting in slow development of this chief sector of our economy". The National Agriculture Sector Strategy prepared with assistance of the Asian Development Bank for the Ministry of Food, Agriculture and Livestock in 2008 cites the lack of a focused and well planned rural finance policy as one of the reasons for the rate of agricultural development remaining below the potential rate of growth. Although the sector's productivity and output grew significantly during the 1970s and 1980s, there are clear signs of stagnation in productivity growth. The average yield of Pakistan's major cereal and other crops—wheat, rice, maize, pulses and sugarcane—is less than the world average. Although this gap has narrowed in case of some crops, it has grown in case of others. As can be expected, this gap is quite large in comparison to highest world averages exhibited in developed countries (see **Table 1**) but even in comparison to developing countries, the yield levels of crops are lower in Pakistan, except for cotton. If these gaps are to be reduced, access to technology, information about modern farming techniques and the latest extension services is obviously needed. All this requires flow of financing into the rural economy.

TABLE 1: COMPARISON OF CROP YIELDS (TONS PER HECTARE) TO INTERNATIONAL BENCHMARKS

Commodity	Highest Average Globally	Potential Yield	National Average
Wheat	6.5 (France)	6.8	2.8
Cotton	4.0 (China)	4.3	1.8
Sugarcane	115.4 (Egypt)	300	55.9
Maize	10.2 (France)	9.2	3.9
Rice	7.9 (USA)	5.2	2.3

Source: Potential yield from Iqbal and Ahmad (1999); international and Pakistan yields from FAOstats

The problem of improving access to institutional credit for agriculture is not a new one in Pakistan. The State Bank of Pakistan's Agriculture Credit Department was created in 1953 to focus on this challenge. Like many developing countries policy makers in Pakistan mainly relied on directed and subsidized lending through state owned financial institutions or specialized banks to channel finances to this sector up till the 1990s. These included the Agricultural Development Finance Corporation and the Agricultural Bank set up in the 1950s which were later merged to form the Agricultural Development Bank of Pakistan (ADBP) in 1961. The Federal Bank of Cooperatives set up in 1976 was also an attempt to channel funds to agriculture through cooperative societies. Commercial banks were also issued mandatory agriculture credit targets in the 1970s. Since the financial reform process began, the State Bank of Pakistan has done away with such schemes and instead only provides indicative target to the commercial banks for agriculture lending. These targets are determined in consultation with the banks under the Agriculture Credit Scheme. Targets and disbursements for the past two years are shown in **Table 2** below.

TABLE 2: INDICATIVE TARGETS FOR AGRICULTURAL CREDIT BY SBP (IN PKR BILLIONS)

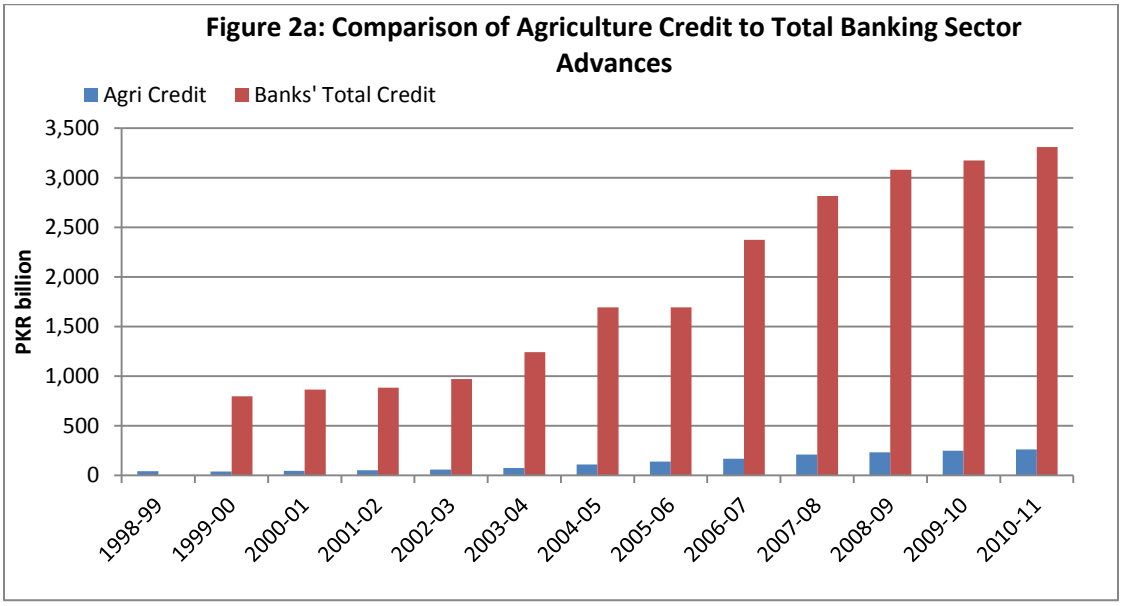
	2010-11		2011-12	
	Target	*Disbursement*	*Target*	*Disbursement*
Commercial Banks	181.3	190.5	195.1	207.1
Specialized Banks	88.6	72.5	77.7	74.6
Total	270.0	263.0	272.8	281.7

Source: SBP

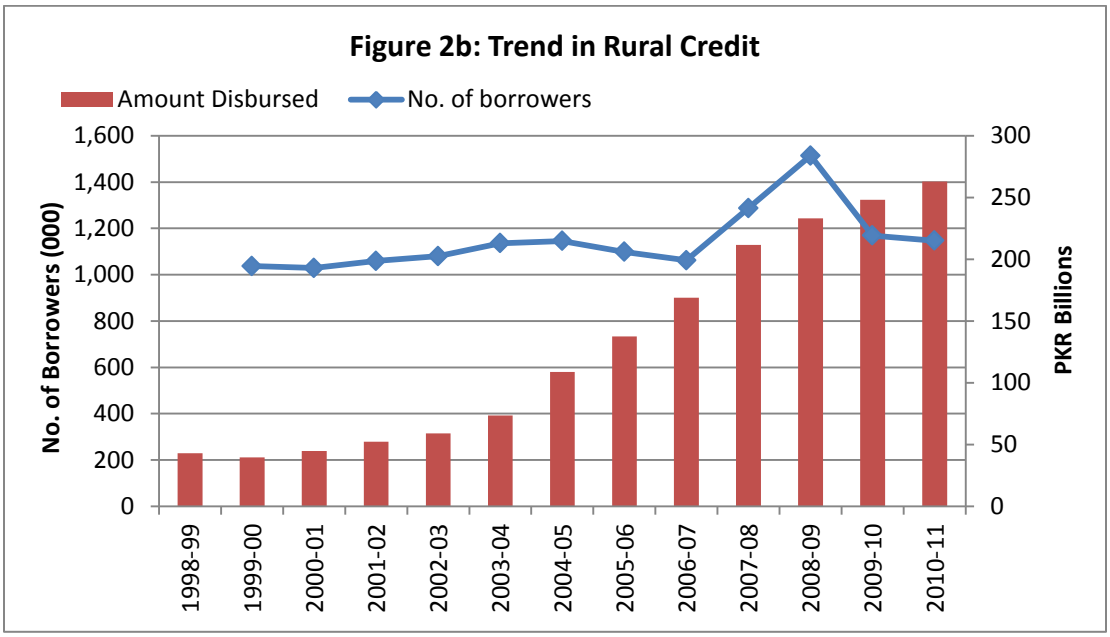
Although it is encouraging that banks are taking these targets seriously and in fact surpassing them, a few trends prove why policy makers remain concerned about agriculture credit. For one, estimates show that demand for agriculture credit has been increasing at a rate of 14.6 per year since 2007-08, whereas SBP's targets have grown at a rate of 9.3 percent per year. Actual disbursement growth has been even lower – at 8.6 percent per year[1]. The supply-demand gap has thus been widening and being filled by informal sources of financing. Secondly, total credit to agriculture makes up only eight percent of the banking sector's total advances (**Figure 2a**). Also, the specialized banks (ZTBL and PPCBL) still account for

[1] Source: Shorebank International and SBP Presentation on *Promotion of Agriculture Finance in Pakistan*, 14th Feb 2013, Karachi.

more than a quarter of formal credit to the sector. Both institutions are financially weak and there are serious doubts around their sustainability given the heavy dependence on public funds and subsides. According to the report of SBP's Committee on Rural Finance (CRF) set up in 2006, only 15 percent of farmers are availing institutional agricultural credit and the percentage of agricultural credit needs met in volume terms has also been historically low (never exceeded 30 percent)[2]. Trend in number of borrowers also shows a bleak picture, with a decline in total number of borrowers of rural credit (see **Figure 2b**).



Source: SBP Statistical Bulletins – various issues



Source: SBP (http://www.sbp.org.pk/acd/dist-Summary.asp)

[2] http://www.sbp.org.pk/report/contents.htm

To further deconstruct this picture, different types of farming households i.e. owners, owner-cum-tenants and tenants vary greatly in their access to institutional credit. Although data on institutional versus non-institutional credit is dated (last agricultural census data was in 2000), it still shows the large demand for credit that remains fulfilled through informal sources in the rural economy. Of the total outstanding debt of Rs. 723 billion within agriculture households, only 39 percent is being provided by institutional sources. This percentage is even lower in case of non-agriculture and households and livestock holders. As can be expected, the distribution of institutional credit is skewed towards larger land holders, with small farmers largely accessing non-institutional sources to meet their farming needs (see **Table 3**). Given that 61 percent of Pakistani farmers own less than 5 acres of land and 33 percent own between 5 -25 acres, it becomes obvious that the number of farmers accessing formal finance is pitifully low[3].

TABLE 3: OUTSTANDING DEBT OF HOUSEHOLDS FROM INSTITUTIONAL AND NON-INSTITUTIONAL SOURCES

Type of Households	Institutional (PKR Million)	Non-Institutional (PKR Million)	Total (PKR Million)	Share of institutional (%)	Share of non-institutional (%)
All Households: Total	**299.9**	**546.0**	**845.9**	**35%**	**65%**
Non-Agri. Households	21.1	101.9	123.0	17%	83%
Agricultural Households	278.9	444.1	723.0	39%	61%
Livestock Households	12.1	69.3	81.4	15%	85%
Farm Households: Total	**266.7**	**374.8**	**641.5**	**42%**	**58%**
Under 5 acres	29.1	152.6	181.7	16%	84%
5 - 12.5 acres	75.9	106.3	182.2	42%	58%
12.5 - 25 acres	70.1	53.4	123.5	57%	43%
Above 25 acres	91.6	62.4	154.0	59%	41%

Source: Pakistan: National Agriculture Sector Strategy (2008)

It thus seems that the demand for credit is there. It is also clear that this demand cannot be met through specialized institutions (whose own existence remains questionable if they continue to work with current models) or even the microfinance sector alone. There is a strong case of channeling more of the commercial banking sector's financing into the rural economy given that they make up over 80 percent of Pakistan's financial sector. In order for any intervention to be sustainable it has to be based on a clear business case for commercial banks. Currently, commercial banks are not set up to lend to the marginal farmers (having < 5 acres of land): their documentation requirements and processes, collateral and security criteria and loan appraisals and monitoring system are not geared to serve this segment at affordable lending rates. Similarly, the marginal farmer is reluctant to deal with a bank since neither the product nor the service is tailored to meet his needs. In the absence of a relationship between the farmers and the banks, credit needs of the agriculture economy are being met though the informal sector.

[3] Pakistan Census of Agriculture (2000), Federal Bureau of Statistics.

The informal credit market is active and vibrant in Pakistan and serves the needs of these farmers. The financiers in this market are referred to as the "arthis", or wholesalers. Viewed as Shylocks of the rural economy by the man on the street, they perform key functions in the agriculture production and marketing cycle. Deeply embedded in the agricultural supply chain and spread across Pakistan, this network of arthis ranges from small local village level operators to rich, large wholesalers. SBP's Committee on Rural Finance (CRF) strongly advocates for linkages between the arthis and the commercial banks and cites disconnect between the two as "highly damaging".

"Arthi" is the local way of referring to the businessmen who act as middlemen in the exchange of crop produce between the farmer/grower and the buyer of that crop and he often hosts the auction process at his shop in the local grain market. The term is derived from "*arhat*", which means commission, as the arthi takes commission for his services, usually quoted as the sale price of the crop produce and deducted up front at the time of crop sale. The arthi is already embedded in the agriculture credit market and seems to have refined his model to avoid adverse selection, control moral hazard, mitigate risk and make substantial profits in a market deemed risky and unprofitable by the commercial bankers. Although there have been various attempts to study the informal credit market in more detail, there is little available detailed information about who these middlemen are, what specific roles they play and their business environment. Mapping these is important to not only learn why the arthi is so successful and continues to thrive but also to gain insights into how his modus operandi can be adapted to allow banks and formal financial institutions to reach rural markets efficiently and manage their risks. Such information is also valuable for designing models and pilots that incorporate strategies used by the arthi, create links between the formal and informal financiers or even create space for new service providers

This scoping study aims to map the arthi's network, understanding his operations, pricing and risk mitigation strategies with a view to a) create a business case for banks to look more closely and seriously at this market b) recommend ideas for pilots, and c) generate ideas for academic research.

This study is thus designed to:

- Take a closer look at the arthi to study his role in the agriculture value chain
- Map the network of the arthi i.e. his clients, his buyers, his investors and creditors, and other stakeholders in his business
- Understand the arthis operations, finances (such as sources of funds, interest rates, costs and profits) and risk management techniques.
- Analyze whether his role can be enhanced and formalized to become integrated with the formal financial sector or use the information to develop a business case for alternative service providers who have the capacity of utilizing formal sector credit and technology.

1.1 Methodology

This study focuses on Punjab which accounts for approximately 60 percent of the country cultivated area and around 65 percent of agricultural output[4]. Punjab itself is divided into five agro-ecological zones: a) cotton-wheat b) rice-wheat c) mixed cropping d) low intensity (i.e. pulses-wheat), and e) *barani*/rain-fed (i.e. oilseeds-wheat). This classification is based on physiographic characteristics, land use, climate and water availability. According to the Punjab Development Statistics (2012), out of the 12.6 million hectares of cultivated land in the province, 41.5 percent falls under cotton, 19.4 percent under rice, 30.8 percent under the mixed crops, and 8.1 percent under barani and low intensity zones. Irrigated zones (both canal and tube-well irrigated i.e., cotton, rice and mixed cropping zones) accounts for 91.7 percent of the total cultivated area and these are the regions covered in the study.

Punjab has two crop seasons[5]:

- *Kharif* is the first sowing season from April-June and harvested during October-December. Rice, cotton, maize, mung, mash, bajra and jowar are the major *Kharif* crops.
- *Rabi* is the second sowing season in October-December which is harvested in April-May. Wheat, gram, lentil (masoor), tobacco, rapeseed, barley and mustard are the major Rabi crops.

The study is based on primary information collected from arthis located in the different grain markets across the agro-ecological zones in rural Punjab, with a focus on irrigated zones as these are the regions dependent on agri-based livelihoods. While selecting the sample consideration was given to the following:

1. Cover diverse crops (given that the supply chains vary depending upon the commodity). Priority was given to major crops and thus the study covers cotton, rice, wheat, and maize.
2. Cover diverse geographic locations. Thus two major grain markets for each crop were chosen, preferably in two different districts. Selection of the particular markets also benefitted from the guidance from Punjab's Agriculture Marketing Department, which plays an active role in the province's grain markets (see Section 2 of the report for details about their role).
3. Capture variations in size of arthis, such as small versus large and also the type of arthi: 'kacha' versus 'pukka' (see Box 1 for an explanation of differences between these two).

[4] Based on output of five major crops as reported by the Federal Bureau of Statistics in Crop Area and Production, Volume I: Food and Cash Crops. 2010.

[5] For example, an average farmer that plants maize in the *kharif* season will plant wheat in the *rabi* season. However, in the course of our field work, we found that many farmers have now adapted the cropping cycle to generate an additional crop that matures in a short span of two to three months (usually a vegetable like potato).

The *kacha arthi* is the primary focus of this study since he is the credit provider in the agriculture supply chain. His forward and backward linkages mainly include the following players:

1. Farmer[6]: this is the kacha arthi's client.
2. Input dealer: these are independent sellers of agriculture inputs, mainly fertilizer and pesticides.
3. Pukka Arthi: this is the wholesaler who purchases agriculture output in the market, either directly from the kacha arthi or in open bidding.

(For ease of narrative, we use the simpler term 'arthi' to refer to the kacha arthi from this point forward in the report.)

Box 1: Kacha vs Pukka Arthi

- Pukka arthi is a buyer of the crop whereas the kacha arthi only works as a middleman, often between the pukka arthi and the farmer.
- The kacha arthi thus does take title of the crop whereas the Pukka arthi takes on the ownership of the crop once he strikes a deal with the farmer.
- The kacha arthi takes commission from the farmer whereas the pukka arthi does not charge the farmer anything.
- Mostly the kacha arthi deals directly with the farmer while the Pukka arthi deals with the kacha arthi instead of the farmer.
- However, both operate in the local grain markets of the area. The number of kacha arthis is more than pukka ones in the market.

Thus, it is the kacha arthi that is playing the role of the informal money lender in the agriculture supply chain.

Given the resource constraint, it was decided that 16 arthis would be interviewed. During the fieldwork however, two additional interviews were conducted, bringing the sample to 18. Generally, the arthis are a closed group and it is hard to access them especially for the type of information that this study sought to collect. There is special reluctance since all arthis are considered to be operating in the undocumented sector and are wary of the tax collector. Purposive sampling was thus used and the field teams relied on using the following sources to identify respondents: staff of the Agriculture Marketing Department of Punjab and personal contacts. This methodology may have its limitations but given the nature of the target population and the objectives of the study (scoping exercise), this was the best available option.

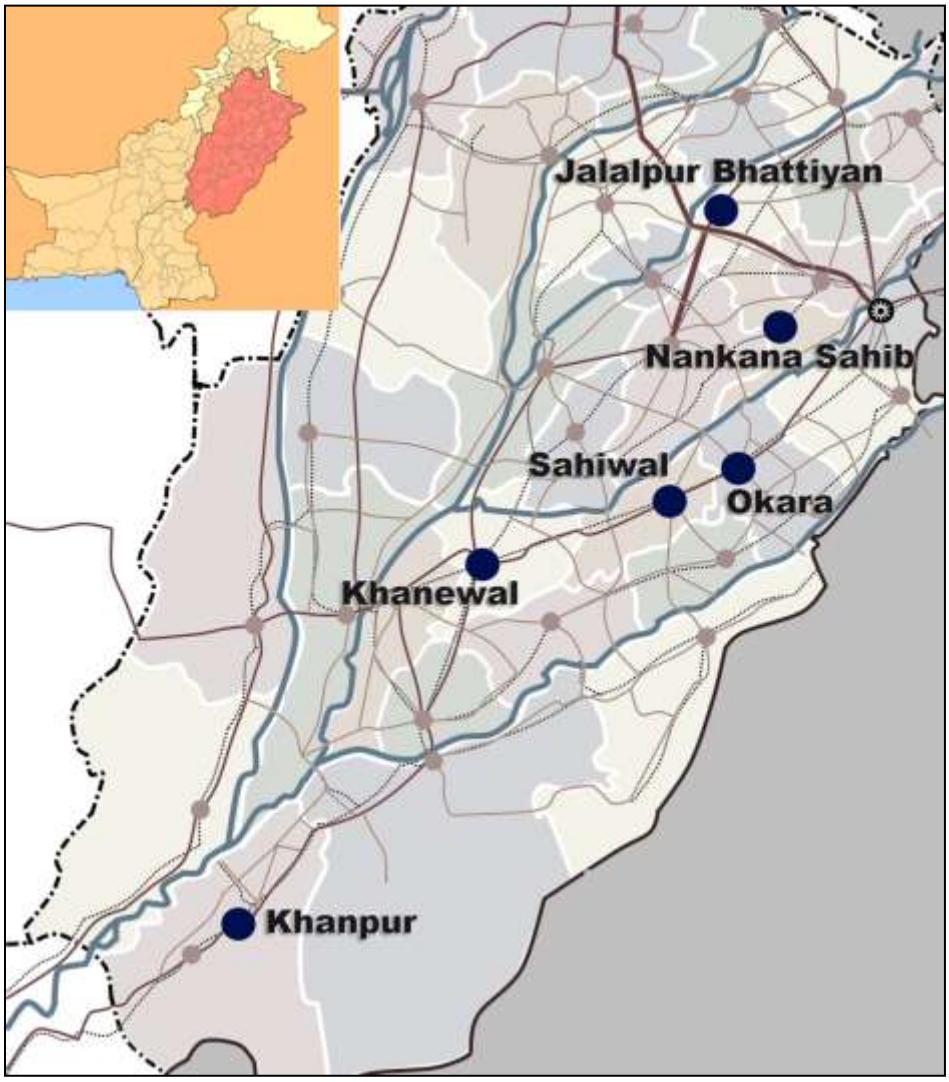
In addition to the 18 arthis, other players in the arthi's network were also interviewed. This was meant to a) understand the role of the arthi and his linkages, and b) cross check information provided by him. The sample breakdown is shown in **Table 4** and locations are shown on the map in **Figure 4**. Data collection tools were questionnaires for each type of respondent designed to provide structure to the interviews (see Annex 1 for the questionnaires). The tools were designed keeping in mind the a) objectives of the study b) literature review, and c) meetings with the Agriculture Marketing Department of Punjab. The tools were tested through a pilot in Okara, a major maize producing area.

[6] Marginal farmers owning ≤ 5 acres of cultivable land; small farmers owning ≤ 12.0 acres; medium sized farmers owning >12.0 but ≤25.0 acres; and large farmers owning > 25 acres of land.

TABLE 4: SAMPLE BREAKDOWN

	Rice		Wheat		Cotton		Maize			
	Nankana Sahib	Jalalpur Bhattiyan	Khanpur	Khanewal	Khanpur	Khanewal	Sahiwal	Okara	Chichawatni & Depalupur	Total
Kacha Arthi	2	2	2	2	2	2	2	2	2	**18**
Pukka Arthi	1	1	1	1	1	1	1	1	-	**8**
Farmer	2	2	2	2	2	2	2	2	2	**18**
Input Dealer	1	1	-	-	3	3	1	1	-	**10**
Total	**6**	**6**	**5**	**5**	**8**	**8**	**6**	**6**	4	**54**

FIGURE 4: LOCATIONS FOR DATA COLLECTION



- **Nankana Sahib:** This is a market that deals entirely with rice and at the time of this study, the season was at its peak. Paddy could be seen everywhere in the market. During the Rabi season, the market converts towards dealing with wheat. Most farmers in the area are small and most of the agricultural land is the property of *Gurdwara Sharif*, which is the holy worship place of Sikhs. Farmers rent the *Gurdwara* land at rents lower than those in other areas and pay a small proportion of their produce to the Gurdwara as compensation for land use. Mostly farmers take inputs in advance from their arthi.
- **Jalalpur Bhattiyan**: This is a town in the tehsil of Pindi Bhattiyan, situated east of the M2 highway near the Pindi Bhattiyan interchange. A well settled and organized rice market, it is larger than the market in Nankana Sahib. Although considered mainly as a market for rice, the area also has great potential of wheat. Given the size of the market, a large number of pukka arthis operate here who are also owners of rice mills and shellers. Some pukka arthis also export

rice to Europe and the Middle East, which makes prices of rice higher here compared to surrounding markets. Mostly kacha arthis are providing inputs to farmers on credit and cash for diesel and electricity used in irrigation.

- **Sahiwal:** This is a big market whose business reflects the mixed cropping pattern of the area – three major crops i.e. cotton, maize and rice could be seen in the market. That said, Sahiwal is more famous for maize after the Okara market which is the largest for maize. The market also deals in pulses, sugar and all types of food grains. The arthi deals in all crops that his client grows and provides both cash and inputs on credit. Mostly farmers are small and medium but appear to have more exposure and information. Use of laser technology for land leveling and soil testing practices were more common as compared to other markets. In addition to the Sahiwal market, the team also visited the Chichawatni market. Chichawatni is a tehsil of Sahiwal and is also a mixed market. Cotton used to be the dominant crop but is now being replaced by maize and potato. Again, farmers here are small but appear more educated about technology and plant protection methods. Arthis only provide cash credit here but borrowing from the arthi is not as prevalent as in other markets. This is because most farmers are involved in other income generating activities besides farming and do not have cash flow issues as severe as in other areas.
- **Okara:** Okara is the hub market in case of maize, a very big and well established market of central Punjab. Mostly farmers are small and medium sized and arthis provide inputs of credit to farmers. Within Okara, an extra interview was conducted in *Depalpur*. Located in a very fertile area, maize and potato are the major crops and farmers are able to harvest three crops annually (two of maize and one of potato). The market itself however is small and although most arthis have shop there, they remain largely in the field. They are thus different from arthis in other markets and may be called 'mobile arthis': they buy the produce from the farm gate, gain title of the crop and then sell it onwards to the wholesaler. It was thus the only market where there is no auction process. This difference is driven by the fact that most farmers in the area are large with average landholding ranging between 100 to 300 acres. In case of Potato, corporate companies like Pepsi Cola and Candyland have made direct contracts with farmers for providing seeds and inputs and then buying the crop at predetermined rates. This has diminished the role of the arthi and farmers seem to be better off.
- **Khanewal and Khanpur:** Initially Khanpur and Multan grain markets were identified in the cotton-wheat cropping zone but the research team found that farmers are not interacting directly with the traders operating in the Multan market since these are the pukka arthis. The Multan market is fed by many ancillary markets in the area, and thus one of these ancillary markets i.e. Khanewal was chosen to replace Multan.

  Most of the farmers located in the "catchment areas" of Khanpur and Khanewal markets were small and medium farmers. There were approximately 125 and 150 kacha arthis operating in both markets respectively, in a competitive but friendly environment. Some of the arthis overlap, i.e. they are both kacha and pukka arthis. Khanpur grain market has a well established infrastructure and clearly written rules and regulations for sellers, buyers and arthies. Farming

techniques did not seem up-to-date, as most farmers were not using even basic technology such as laser land leveling and soil testing. Most of the sowing is done by hand, which the farmers claim to be far more efficient, in terms of lost seeds, as compared to other methods. Most of the farmers also claimed a lack of extension services, provided by the Government Departments, which could help them achieve better results.

1.2 Report Structure

This section is followed by a summary of key findings from the literature review conducted in the course of the project (Section 2). Section 3 provides the reader an overview of how commodity markets work in Punjab i.e. where they are located, how they are structured in terms of governance and management, and its operations. Although this was not part of the original terms of reference for the study, it contextualizes the arthi's business and helps understand his operations better. It is also crucial to understand these markets better if the ultimate goal is to link the different players in these markets with the formal financial sector. Section 4 takes a closer look at the arthi and answers questions raised in Section 1. We conclude in Section 5 by bringing the findings together to say whether the arthi is well positioned or has the capacity to act as an intermediary between the banks and the farmers.

Box 2: Changing Patterns in Southern Punjab

In the cotton-wheat markets, the field team made an interesting observation about how the crop patterns are changing. Farmers and arthis talked about how a new strain of cotton is replacing the wheat crop in the area. The new hybrid cotton variety, locally known as BT-86 Cotton, has an average of 6-7 pickings as compared to the normal 2-3 pickings of the traditional cotton crop. However, this cotton strain has to be sown earlier than the traditional varieties, and thus eats into the wheat acreage. As cotton is a cash crop, and far more profitable than wheat, there is a clear shift towards this new variety. It is estimated, based on the interviews, that approximately 30-35 percent of the cotton crop has shifted to this BT variety. This might cause wheat supply problems in the future.

2 Literature Review

The informal money lender has occupied an important space in the economies of various countries the globe over in different historical periods/ points in time. At present, the informal money lender continues to hold an important position in the rural economy of developing countries. There is vast literature on the subject and great variance in the way the informal money lender is perceived and portrayed. Some see the money lender as a Shylock exploiting the poor by charging usurious rates of interest trapping borrowers in a vicious cycle of indebtedness. Others view the money lender as indispensible to fulfilling the credit needs of farmers in rural areas who lack access to formal finance, thereby, playing an integral role in the livelihoods of millions. Regardless of the dominance of positive or negative paradigms surrounding the money lender it is undeniable that over the centuries this institution has very much survived, a testament to the resilience of the informal money lender (Sharma & Chamala, 2003). This is especially true of the sub-continent. Money lenders have thrived under Hindu, Muslim and British rule and continue to dominate the informal credit market in present day India and Pakistan.

Development thinkers and practitioners have called for the dismantlement of informal money lending and there have been various initiatives and interventions (both governmental and non-governmental) to increase access to formal finance through commercial banks, government cooperatives and microfinance institutions. The Grameen model of microfinance is in fact premised on the observation that the poor are being charged exorbitant rates of interest by informal money-lenders who need to be displaced by microfinance providers who, while charging interest, ensure the borrower's ability to repay and have an interest in the social well-being of the borrower and his ability to climb out of poverty. However, lending for agricultural purposes in microfinance has been plagued by problems. Microfinance providers have also historically been wary of agricultural lending as returns in agriculture are unpredictable and lending is riskier compared with lending to commerce or non-farm enterprises in urban areas (Derflinger et al, 2006). In addition, in practice, repayment of loans on a weekly or monthly basis (as is the common practice amongst microfinance providers) is not feasible where farmers will harvest crops four to eight months after taking the loan for production purposes. This means that farmers will have to pay off their agricultural loans in weekly or monthly installments by relying on alternative income streams to comply with these terms and conditions[7]. MFPs lending in agriculture in Pakistan have developed bullet loans that overcome these limitations (and others such as collateral requirements, documentation requirements and disbursement lags) and serve the small farmer but given the large volumes needed by the sector, they have only managed to scratch the surface.

Despite an increase in the number of branches of banks and microfinance institutions in the rural areas of developing countries the informal money-lender remains. The reasons for this are manifold. First, money-lenders often provide loans without demanding security or collateral from the borrower, an important requirement of formal banks (this suits the poor who lack access to collateralizable wealth). In

[7] *Making Microfinance Work for Agriculture*. John J. Carroll Institute on Church and Social Issues (n.d)

addition, money-lenders are often more accessible (in terms of distance/proximity) than formal banks. Furthermore, informal lenders are able to provide credit without 'delay and undue formalities'. This is important as at times production and consumption credit is required on an urgent basis (Gill, 2004; Quartey et al, 2012; Amjad & Hasnu, 2007). Choudhury (2004) notes that often high interest rates on loans are not a deterrent; rather it is the 'timeliness of product availability' and the formal sector is rarely able to provide credit at the speeds at which informal money-lenders are able to. Repayment schedules are also more flexible than with institutional lenders. Microfinance providers, like informal moneylenders, do not require traditional forms of collateral and disburse loans relatively quickly.

Possibly the most important reason for the dominance of the informal money-lender, however, is one that is more nuanced in nature. This view holds that the informal money-lender's survival in today's world is rooted in the way this institution has morphed and adapted over the years. This corresponds to what Gill terms the 'rise of the trader-money lender' (2004) and the interlinking of credit and output transactions. Informal money-lenders provide loans and instead of demanding repayment in the traditional manner in which formal banking institutions do, demand repayment in terms of output (Aleem, 1990). According to Gill, the informal money-lender has been ingenious in demanding crops as collateral in the place of land (traditionally demanded by formal banking institutions). The informal money-lender, therefore, performs a dual role 'not just of providing credit but also acting like an agriculturalist/ trader' (Gill, 2004). Gill goes as far as to say that the money-lender has changed his guise to that of a commission agent whose principal activity is no longer money lending. Gill also maintains, that given the interlinking of credit and output markets it is no longer plausible to eradicate the system of informal money-lending as this will be harmful to the functioning of agricultural markets in developing countries.

Aleem (1990) noted the interlinking of 'loan and commodity contracts in informal markets' in his case study of Chambar district in Sindh province of Pakistan. This interlinking makes perfect sense from the perspective of the informal money lender as it protects him from loan default and reduces his risk in the absence of collateral. From the borrowers perspective such inter-linking is convenient since it protects the borrower from imprisonment in the case of defaulting on a bank loan since the borrower will simply owe the informal money-lender his/her next crop.

It might be more realistic for formal finance institutions to integrate the informal money-lender into their operations instead of attempting to do away with him completely. In theory these formal players hold that by entering the rural market as alternative credit providers and increasing competition the demand for formal sector loans will rise, and the interest rates that informal money-lenders charge will fall. This is not necessarily true, however, as seen in the BRAC's case study (Mallick, 2009) of Bangladesh where it was noted that where microfinance institutions have provided small farmers in rural areas productive loans (to assist with agricultural activities) the phenomenon of 'crowding in' of informal money-lenders has set in. The demand for loans from the informal money-lenders has in fact risen, that too at higher interest rates to pay off loans taken from the microfinance institution (repayment begins immediately after before any crop has actually been produced and harvested). The loan from the informal money-lender is essentially being used to pay off the loan from the microfinance institution (Mallick, 2009).

Incorporation of the informal money-lender in the formal credit market by banks and MFIs comprises an innovative and interesting possibility in improving access to formal credit amongst the rural poor. This is different from the policy suggestion in the past which has called for formal financial institutions to supply subsidized credit to informal sector lenders 'to enhance competitiveness between the lenders and thereby compel them to pass on some of the benefits to the borrowers which the traditional credit policy fails to deliver' (Chaudhuri, 2000). The linkage suggested here is premised on the idea that formal financial structures ought to take advantage of the many strengths of the informal money-lender. 'If there are individuals within the local community with information concerning creditworthiness of borrowers and with some ability to impose sanctions on non-performers, economic theory provides a potential answer. These individuals could be appointed as loan intermediaries' (Maitra et al, 2012).The informal money-lender could be one such intermediary. The utility of the informal money-lender as loan intermediary derives from his access to local information. In their current operations 'informal lenders rely more on the character and history of the borrower, particularly on personal knowledge of the borrower' (Mariwah, 2012). It is precisely this that formal finance institutions lack. The informal money-lender can, therefore, be indispensible to screening and suggesting safe versus risky borrowers to the banks and MFIs. It has been noted in various studies that the informal money-lender performs with greater efficiency than formal financial institutions and this is one such respect. Maitra et al (2012) have in fact piloted such intermediated lending in 72 villages in West Bengal in India. Initial results show that such intermediated lending has resulted in higher repayment rates than traditional group based lending. The challenge, however, will be to incentivize the informal money-lender adequately and also to ensure that the informal money-lender is not abusing his powers and colluding with borrowers/ recovering loans forcefully from them.

Interest rate in the informal credit market

The informal credit market in general is thought to be characterized by high and varying rates of interest. Aleem (1990) reported that the average interest rate charged by moneylenders in Chambar was 78.5 percent; in that year, the bank rate in Pakistan was 10 percent and the opportunity cost of capital to these moneylenders worked out to 32.5 percent. For comparison, the "Reports on Informal Credit Markets in India: Summary" (Dasgupta, 1989) found results from a number of case studies in which the average interest rate charged by professional moneylenders for the rural sector was about 52 percent (Qadir, 2005).

The literature takes note of many factors that shape interest rates charged on loans provided by informal money lenders. These factors in differing combinations determine the interest charged by the informal money lender. In the first place, interest rates vary depending on the cost of providing credit to the informal money lender (Ghatak, 1975). The cost comprises of the opportunity cost (normally taken to be the deposit rate in banks), administrative cost (depends on size and term of loan; larger the size and longer the term the lower the cost per unit) and the risk premium (risk is higher where default likely due to poor economic conditions, inflation and sudden shocks such as crop failure) (Ghatak, 1975; Bottomley, 1975).

Secondly, interest rates vary where market conditions are conducive to informal lenders exercising a monopoly. A monopoly is likely in an uncompetitive market where they are either few lenders (both

formal and informal) or where the borrower has limited access to credit even in the presence of many lenders (i.e. he can only borrow from one lender). A monopoly is also likely where borrowers require credit on an urgent basis and so is 'inelastic in demand'. Where a monopoly exists, interest rates are bound to be higher.

Thirdly, information asymmetry also affects interest rates. If a lender has imperfect information about the credit worthiness of a borrower, and is unsure of his likelihood of default, he is likely to demand security as a way to mitigate his risk (to ensure he gets some form of return in case of default). The presence of security means the presence of risk which can drive interest rates up. From the borrower's perspective, the less information he has about lenders and alternative terms and conditions the more likely he will be to borrow at a higher rate. In this regard, the level of the education of the borrower is an important determinant. The more educated the borrower, the more likely he is to investigate the terms and conditions being offered and the more likely he is to borrower at lower rates of interest. Bhattacharjee and Rajeev (2010) noted that possessing education even till secondary level was correlated to borrowing at lower interest rates.

In addition to these interest rates are also affected by the type of informal lender, the level of development of a region and the type of household in question. The literature distinguishes between professional money lenders and non professional money lenders in the informal credit market. The former is normally taken to mean those persons who focus exclusively on money lending which is their principal activity. Non-professional money lenders on the other hand are taken to mean those who have some market inter-linkages. The trader-cum-money lender and agriculturalist-cum-money lender are classified in this category. Interest rates vary across these two informal money lenders. Broadly speaking the professional money lender charges a higher interest rate than the non professional money lender in the informal economy since the latter by virtue of the presence of market linkages has better information and hold over the borrowers which reduces his risk (Bhattacharjee & Rajeev, 2010).

Interest rate also varies depending on the level of development of a region. For instance in Bhattacharjee & Rajeev's study the majority of the credit provided in developed regions was at an interest rate of about 24 percent while in less developed regions stood at about 36 percent. This is probably because of better repayment rates in more developed areas and lower risk of default. More developed in this context were the states of Punjab and Haryana on account of higher grain yields and a lower percentage of population living below the poverty line. Less developed were Chattisgarh and Madhya Pradesh.

Interest rates offered also vary depending on the income of the household in question. Higher income households tend to have higher access to different sources of credit and so greater competition forces money lenders to bring interest rates down. Interest rates can be driven down in situations where borrowers have greater clout vis-a-vis lenders - Smith et al (1999) found that landowners with bigger marketable surpluses had greater bargaining power and was charged lower interest rates in Sanghar district, Sindh. On the other hand poorer households have lower accessibility, fewer options thereby creating conditions that are conducive to informal money lenders establishing a monopoly, thereby, driving interest rates up.

A case study of Sanghar district, Sind province (1996-1997) found that there was an interlocking of credit provision with input supply and output marketing in the cotton and wheat markets of the region. In fact, 'no examples were found of traders or other moneylenders, prepared to lend seasonal working capital to *zamindars* without interlocking both input supply and output purchase'. Private traders called *padhys* supplied *zamindars* or landowners with credit either in cash or in kind (seeds, fertilizers and pesticides) and had interlinked contracts buying cotton and wheat output from these same landowners to supply to ginners or the food department/ on the private market respectively. It is important to note that this study focused on the informal moneylender's engagement with the landowner and not the tenant i.e. the *padhy* provided credit exclusively to the landowner and not the tenant. The study found that lenders make their profit not from lending operations necessarily but rather from 'the volumes of seed cotton that they are able to sell on to ginneries, combined with the ability to benefit from intertemporal arbitrage between the day of sale and day of delivery to the ginnery'. Interest rates charged by the *padhys* were highly variable. Interest rates charged on credit supplied stood at 5 percent per month (30 percent for a six month crop cycle) approximately, commission charged on that supplied in kind could not be worked out accurately, however, was concluded to be less than explicit interest charged (estimated at 11 percent for six months). Interest rates varied according to the creditworthiness of the borrower, the bargaining power of the landowner (a larger landowner with a bigger marketable surplus is charged lower rates compared with a smaller landowner who is unlikely to have a surplus), the degree of the landowners access to alternative sources of credit and the interest being charged to the *padhy* by his credit source (1.5 percent to 2 percent per month from informal moneylender/ commercial banks). Interlinked contracts it was found were often informal and verbal but were honored because traders discussed clients amongst one another and if a landowner dishonored his agreement he would find it difficult to obtain credit in the following season. This study found that from the perspective of the landowners the interlocking was not inequitable. The interlocking was not inequitable 'since the price in each market is usually explicitly stated when the two parties settle up their accounts with each other at harvest time. Although bargaining over the prices in each respective market may take place ….mutually known ``market'' rates for credit, inputs and outputs usually serve as a reference for the negotiation. Most *zamindars* obtain quotes from other traders before finally making a contract'. The study found that *zamindars* earn 'almost 80 percent of the Karachi wholesale value of ginned seed cotton. In the case of wheat they received the government procurement price less a ``commission'' of approximately 1 percent retained by the *padhy*' (Smith et al, 1999: 403-418). This study proves that a simplistic understanding of the relationship between the informal money lender and his borrowers will not suffice. There are many factors that come into play determining the nature of the relationship between the informal money lender and his client (i.e. whether it is exploitative or not and to what extent). Depending on the characteristics of the informal moneylender, the characteristics of the borrower, the nature of their contract and the nature of prevalent market conditions, the moneylender's classification as Shylock may not be an accurate reflection of reality.

3 Commodity Markets of Punjab

Agricultural commodity markets in Pakistan operate through a fairly diversified system. Multiple channels exist for the buyers and sellers to interact, and exchange commodities. In the agriculture supply chain, the retailers are the final interface for the consumer but there is a whole series of buyers and sellers that close deals on a daily basis before the product hits the retailer's shelves. The main avenue for interaction between the farmer and the buyers is the wholesale commodity markets or the "mandis". These are notified, or recognized by the government as designated places for sale and purchase of commodities. These are not only places where the farmer brings his produce but also provide the space for interaction with a range of other players such as the input dealers, arthis, wholesale buyers, agents of large factories and processing units etc.

Presently, there are 244 agricultural wholesale markets in Punjab, for grains and fruits and vegetables. Additionally, there are also 81 feeder markets to feed the main agriculture produce markets (Table 5)[8].

TABLE 5: MARKETS IN PUNJAB

	Type of Market	Number
1.	Grain Markets	149
2.	Fruit and Vegetable Markets	95
3.	Feeder Markets	81
	Total	**325**

All grains and major crops other than fruits and vegetables are bought and sold in the grain markets, which were the focus of this study. The fruits and vegetable markets have grown in recent years and anecdotal evidence from our interactions with players in the grain markets show that margins and profits are higher in these markets as compared to the grain ones. In fact, arthis and players that were previously limited to grains are now venturing into the F&V markets as well.

Despite variance in the size and nature of the different grain markets, they function through a fairly standardized model with clearly defined roles for all the major players involved; and follow a similar set of rules.

3.1 Regulation, Governance and Key Institutions

The government is not directly involved in the marketing of agricultural produce in Punjab. It has a legal framework in place to guide the regulation and governance of the wholesale markets. The Agriculture Produce Markets Act, 1939 was followed in the first twenty years after the formation of Pakistan. This was eventually replaced by the Punjab Agricultural Produce Markets Ordinance (PAPMO) 1978; and the rules to regulate the operation of wholesale markets were framed in 1979. The provisions of this

[8] *"Agricultural Marketing System in the Punjab"* Directorate of Agriculture (Economics & Marketing) Punjab, Agriculture Marketing Information Service Publication No. 01/2006

Ordinance legally control all agricultural marketing activities in Punjab, particularly those of wholesale markets.

Directorate of Agriculture (Economics & Marketing) Punjab:

The Directorate of Agriculture (Economics & Marketing) was established in 1967 for the purpose of managing agricultural marketing activities in the province. The Directorate is responsible for overseeing the financial and administrative control of Market Committees (discussed below). Most core functions of the Directorate are operationalized through these Committees. Since January 2004 a specialized Agriculture Marketing Wing has been established to aid the Directorate in managing agriculture markets.

Market Committees:

The formation of Market Committees dates back to the Act of 1939. These committees were initially established to safeguard interests of growers and protect them from exploitation. While the core purpose remains the same even today, these committees were given broader authority under the Punjab Agricultural Produce Markets (General) Rules, 1979. According to the 1979 Rules, the committees are constituted by Zila Councils by a date fixed by the Secretary to the Government of the Punjab, Department of Agriculture. In cases where there is no Zila Council, the District Coordination Officer (DCO) is mandated to provide lists of growers, consumers and licensees under sections 6 and 9 of PAPMO to the government. The Zila Nazim (or DCO if there is no Zila Nazim) is required to consult the Extra Assistant Director of Agriculture (Economics & Marketing); as well as any existing Associations of growers, consumers and the licensees to obtain names of potential members of a market committee. Each Committee elects a chairman and vice-chairman at this first meeting. The Chairman has to be a representative of the growers with Matric and enjoys tenure of three years. Candidates are nominated by the members, and elected on the basis of a simple majority. The chairman and the vice-chairmen are considered to have assumed office once their election has been confirmed by the requisite Zila Council or DCO. No member can be elected to either post for two consecutive terms, and each term lasts for a period of three years.

There are currently 135 market committees overseeing the agricultural markets within their notified areas[9]. These committees generate their own funds by levying fees and licences on the market participants. These committees – and the markets functioning under their notified area – are classified into three different categories based on their financial resources. The category or 'class' of the committee also determines its size and composition (see Table 6). A market committee is initially registered in class C and then works its way up according to revenue generation benchmarks amongst other criteria.

[9] The entire area of Punjab under civil administration has been divided into 134 segments to serve as notified area for a particular market committee.

TABLE 6: CLASSIFICATION OF MARKET COMMITTEES

Class	Annual Income	No of Committees	No of Members	Composition
A:	Above PKR 1.6 Million	27	17	• Growers: 5 • Licence u/s6: 2 • Licence u/s9: 1 • Consumer: 1 • Govt representative: 1
B:	Above PKR 0.8 Million but less than PKR 1.6 Million	52	17	• Growers: 5 • Licence u/s6: 2 • Licence u/s9: 1 • Consumer: 1 • Govt representative: 1
C:	Up to 0.8 Million	56	10	• Growers: 9 • Licence u/s6: 5 • Licence u/s9: 1 • Consumer: 1 • Govt representative: 1
	Total in Punjab	**135**		

The market committee is a powerful body and exerts considerable influence over how the market works. Their key responsibilities include[10]:

- Acting as an extension of the government to enforce the provisions of the PAPMO 1978 and the 1979 Rules, which includes provisions for commissions, fee and charges for different service providers operating in the market
- Issue licences to agro based industries, commission agents and market functionaries
- Collection and dissemination of agriculture commodity price information
- Maintenance and development of the market infrastructure as well as providing facilities such as cold storages and warehouses for growers

EXHIBIT 1: OFFICE OF THE MARKET COMMITTEE, KHANEWAL

[10] For detailed functions of the market committee, please see http://www.agripunjab.gov.pk/~agripunj/uploaded/file/Legislation/PUNJAB%20AGRICULTURAL%20PRODUCE%20MARKETS%20_GENERAL_%20RULES,%201979.pdf

- Ensure no unfair practices ensue in the market place through activities that even involve surprise audits of commission agents' records
- Develop budget proposals on an annual basis
- Coordination with District Administration for organising Sunday/Friday/Ramzan/Sasta Bazars

Board of Arbitrators

In addition to the market committee, the 1979 Rules also call for the establishment of a five member Board of Arbitrators for each notified area, appointed by the government out of a panel of names recommended by the Extra Assistant Director of Agriculture (Economics and Marketing) and the Chairman of the concerned market committee. The core job of this Board is to resolve disputes between the buyers and sellers of agricultural produce.

Anjuman-e-Arthian (Association of Arthis)

To run the affairs of mandis smoothly, arthis form an association which is elected on a periodic basis. The role of the association extends from dispute settlement among arthis, or between arthis and farmers, to maintaining the basic infrastructure and overall activity accounts of the market. It also fixes the expenditure schedule for both sellers and buyers, and helps market committee officials in collection of market fee (more on this institution in Section 4 of the report).

3.2 How the Commodity Market Works

The basic objective of the agriculture commodity markets is to facilitate the farmers by providing a platform to sell their agricultural produce at a fair price. The commodity markets of Punjab are spread across the province with an average distance of about 30 km distance between each. One market can have more than 100 arthis doing business in it while there are more than 250 arthis working in the large markets such as Okara, and Sahiwal (amongst those covered in this study). Arthis, or commission agents that this study focuses on are usually found in B and C class markets only and have a very limited presence in Class A markets (such as Multan and Lahore). It is the pakka arthis, and representatives of ginners/factories/mills etc that dominate the Class A markets.

There is a whole range of players that come together in the market (called a *mandi* locally), the key ones being:

- Farmers
- Katcha Arthi (commission agent)
- Pukka Arthi (wholesaler)
- Beopari (village level trader)
- Broker
- Palledars (labor)
- Dallal (auctioneer)

- Input dealers
- Market Committee
- Purchase agents of processing factories

EXHIBIT 2: A VIEW OF THE OKARA MARKET

Figure 4 shows a simplified version of linkages between the various players.

Farmers: A large number of farmers directly market their produce at the *mandi.* However, majority of marginal farmers (< 5 acres of holdings) sell their produce through the *beopari* (village dealer). Moreover, some large farmers (having > 25 acres of holdings) make direct bulk supply to downstream industry and traders/exporters.

Kacha Arthi (commission agent): The farmer has only two cash inflows during a year because there are two cropping cycles annually[11]. The *kacha arthi* acts as the farmer's bank: in dry periods he relies on the arthi for funds to meet his day to day expenses and more particularly to purchase agriculture inputs. This advance or credit account is then settled when the farmer's crop materializes. The farmer is bound to sell his crop at the arthi's shop. The arthi does not take title of the produce and only arranges auctions for the sale of the farmer's produce brought into the market. The arthi will deduct the agreed commission (*arhat*) from the sale income of the crop, and either hand over the remaining amount to the

[11] There are some exceptions such as in Okara farmers are able to get two harvests of maize and one of potatoes annually. In this case they have three inflows.

farmer or retain it for the farmer to withdraw on a needs basis. The kacha arhti is thus the central point for the farmer and he maintains relationships with other players such as the pucca arthi and input dealers on terms and conditions that often the farmer is not privy to. It is thus upon the kacha arhti to fulfill the farmer's credit needs in cash or kind.

Pukka Arthi (wholesaler): He is an important market intermediary. He often purchases in bulk either for storage (sale in later at higher prices) or supplies directly to the processing industries, mills, traders and exporters at some margin on prices. He may himself be a mill owner or in some cases take the role of an exporter, supplying international buyers (for example, one of the pukka arthis met during the field visit to Okara was exporting maize to Malaysia). He thus uses either his own or the factory owner's/exporter's/trader's capital. He may also borrow from formal or informal sources.

Beopari (village level trader): This is an important village level intermediary for making small scale purchases and sale of agriculture commodities. He buys from the farmer in the village and either directly sale to the processing unit or takes the produce into the *mandi* and sells it through a kacha arthi to the pukka arthi. He uses either his own or the factory owner's/kacha arthi's capital. He also advances inputs on credit to farmers and binds the recovery with purchase of produce.

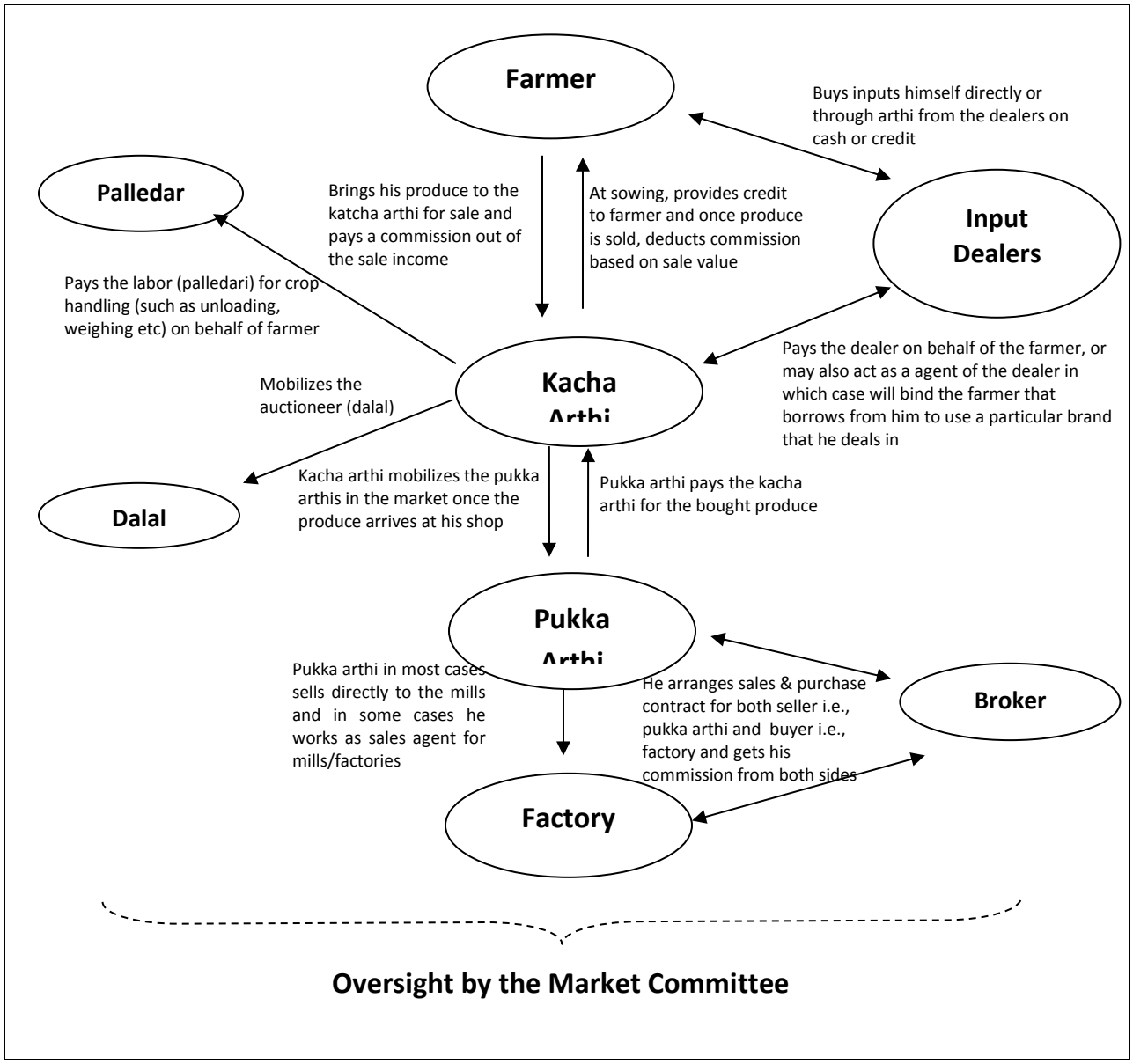
Broker: He does not take title to the produce but takes responsibility for selling the produce. He usually acts as an agent of the pukka arthi or the processing industry/mill. He usually charges commission for his services.

Palladars (Labor): These workers are associated with the kacha arthi and usually offer their services to farmers and pukka arthis. Their main services are loading, unloading, weighing etc and are paid by both the farmer and the pukka arthi. They also form their own elected associations in the market.

Dalal (auctioner): Dalal (licensed by the market committee) manages the auction process and takes his fee from the kacha arthi, who in turn deducts it from farmer's sale revenue.

Input dealers (usually fertilizer and pesticides): They operate either in the market or area adjacent to the market. Depending upon how his arthi operates, the farmer may either purchase inputs directly from an input dealer who in turn has a contract with farmer's arthi or the farmer buys directly from the input dealers on credit or cash.

Figure 4: Linkages within a Commodity Market



A commodity market appears to be a community of people with well defined roles and close daily interaction. Many of them have family histories of the same or related business. In fact, one man could be a kacha arthi while his brother works in the same market as a pukka arthi and his son owns a pesticide dealership. Relationships have been built on mutually beneficial basis. The market structures have been recognized by the government, including the institution of the arthi, and the current policy seems to be to let the markets work while providing development support through the market committees. The different players in the market organize themselves into associations such as the

association of arthis, the association of farmers etc. These associations create bargaining power for the group and also provide dispute resolution platforms (in fact the associations forbid its members from taking affairs related to the market to the police or courts).

Fixation of Rates and Commissions in the Market

Rates of commission, fees and charges as well as processes are either clearly mentioned in the different government documents (such as the 1979 Rules) or in 'guides' or other similar documents issued by market committees and associations. Rates of remuneration officially defined by the government are however rarely followed. These have not been revised since they were first ordained in 1979 and are just not acceptable to the market players due to inflation over time (see Box 3 for examples). Officially it is the market committees that now set rates and monitor them but in practice the players tend to set the rates themselves. These rates are driven by competition in the market but also mutual understanding between the arthis. It is not unusual for arthis to 'group' together to determine what commission should be[12]. The market committee has the authority to stop such collusion and revoke an arthi's license for overcharging but this generally does not happen, because once the matter goes to the courts, the magistrates do no cooperate with the committee.

Box 3: Official Rates of Remuneration in the Market

The 1979 Rules define the charges that are permissible by different market functionaries. For example:

- A commission agent (kacha arthi) can only charge 1.50% in case of food grain and other crops, 2.50% in case of fruits and 3.12% in case of vegetables, of the value of the agricultural produce.
- A broker can charge 20 paisa per quintal of agricultural produce bought or sold.
- A weighman can charge 0.20% of the value of the agricultural produce weighed.

More about the Auction Process

The auction process varies from market to market and crop to crop. The agriculture commodity markets are characterized by large number of sellers and relatively small number of buyers, thereby lending the price formation process open to manipulation through collusion. However, highly integrated commodity markets (literature supports that grain markets in Punjab are highly integrated), government market regulatory framework and market information flow limits the extent of such manipulation.

Once the produce is brought to the kacha arthi's shop, he calls the pukka arthis (the actual buyer of the crop) and hosts the bidding process. Mostly, bidding process starts after 11:00am in every market. A *dalal* (auctioneer licensed by the market committee) manages this bidding process. Based on visual inspection, quality assessment (moisture level, purity etc), buyer's price information, and international

[12] For example, according to the rules, the kacha arthi is only supposed to take commission from the seller (the farmer). In areas where the kacha arthis are charging the prescribed 1 percent from the farmer, they supplement it with an additional 1 percent from the pakka arthi. Source: interview with Punjab Agriculture Marketing Department.

market price (in case of cotton and rice) he announces a starting price and begins the bidding process[13]. Opening prices in auctions are technically supposed to be set by the auctioneer, but the auctioneers are generally a representative of the commission agents, so the opening prices are dictated by them.

Bidding continues until the bidder with the highest bidder remains to whom the crop is sold. In some cases, the bidding is open-ascending (as in case of Khanpur and Khanewal cotton and wheat markets, and the Okara maize market) whereas in some markets bidding is confidential (through predetermined hand gestures or signals as the case of Nankana rice market and Sahiwal maize market), while in others it is based on simple negotiation between buyer and seller (as in Depalpur maize market and Jalalpur Bhattian rice market).

[13] There is even a consultancy firm (Waqas Consultants) in Hasil Pur grain market, where arthis are provided with the international price information via text messaging on mobile phones.

4 A Closer Look at the Arthi

Perceptions about the arthi vary in literature and in real life. Some see the arthi as the exploitative money lender, charging usurious rates of interest, trapping borrowers in a vicious cycle of indebtedness over generations and resorting to extortionist methods of recovery. Others view him as a service provider fulfilling the credit needs of farmers in rural areas whom the formal financial sector deems not worthy of credit, thereby filling an important gap with implications on livelihoods of millions. Regardless of which image reflects the actual facts, it is undeniable that this institution has survived over centuries and continues to thrive in the rural economy, especially in the sub-continent.

In Pakistan, policymakers and development practitioners have long advocated for controlling, if not completely eliminating, this institution due to its perceived (or actual) exploitative nature. Direct interventions have been made by the state to channel credit to small farmer aimed and thus reduce the hold of the arthi over the rural credit market. NGOs and microfinance providers have started lending to farmers to provide them an alternative to the informal money lender. Where the former strategy has proven far from successful, the latter is only able to meet a small percentage of the credit demand. The current strategy of incentivizing and encouraging commercial banks to lend to the agriculture sector has not really opened the floodgates of funding into the rural economy.

As the financial sector stakeholders try to find ways to innovative solutions to this dilemma, there is a strong call to learn from the arthi and even find ways to partner with him. In this section, we provide insights into the arthi's operations to inform these discussions. Given that our findings are based on a small sample, we are careful not to generalize our findings across the entire arthi population in Punjab. However, these initial insights will prove useful to develop basic understanding about this important player in the rural economy and also for further research.

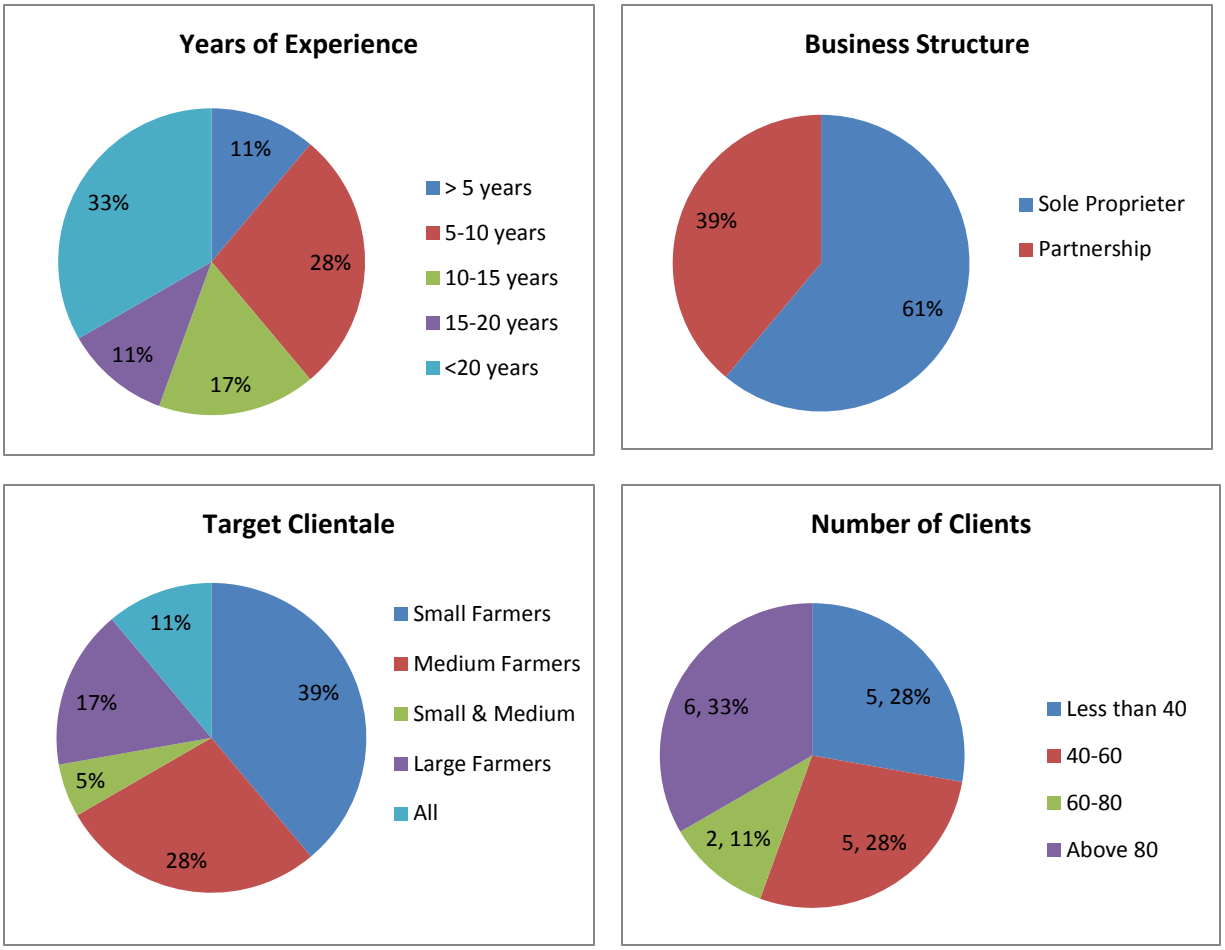
4.1 Sample Statistics

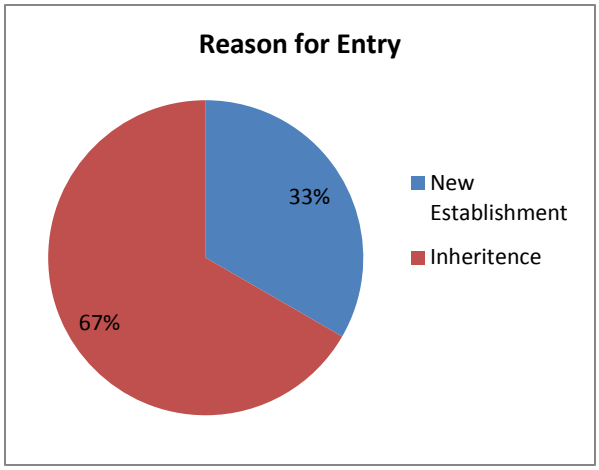
Findings reported in this study are based on in-depth interviews with 18 arthis across eight different locations in Punjab. Two arthis were interviewed in each location at minimum (except Depalpur and Chichawatni where only one arthi and one farmer each was interviewed) and at least two locations for each of the four major crops were identified. In addition interviews with farmers that had borrowed from arthis (18), input dealers (10) and pukka arthis (8) operating in the markets were interviewed to triangulate information collected from the arthi.

The sample is a mix of arthis in terms of their experience in the business: nearly 40 percent had less than 10 years of experience whereas nearly 30 percent had been in the line for 15-20 years while the remaining had more than 20 years of experience. 61 percent worked as sole proprietors whereas the remaining 39 percent engaged in partnerships. 67 percent of the arthis had entered the business because it had been the family business and they had inherited it. The rest were new establishments.

Most of the arthis interviewed (67 percent) work with small and medium sized famers. Only three (17 percent) out of eighteen arthis interviewed dealt with large farmers (two in the rice belt of Gujranwala and one in Maize belt of Depalpur) and two (11 percent) do business with all type of farmers (both in Khanpur). In terms of the number of clients handled by one establishment, the sample shows a relatively equal distribution (see Figure 5 for related graphs). Ten arthis (56 percent) reported having less than 40 or 40-60 clients while six (33 percent) reported more than 80 clients. One reported having 150 clients while another reported 250 clients. All arthis that responded to the question about other sources of income (16/18) were engaged in some other business besides the arthi establishment. These included seven who engaged in farming themselves (not surprising given that all owned land), four that owned an input dealership and others that rented out their land, owned a petrol pump, sold spare parts of agriculture machinery etc. All arthis had at least qualified their Matric while four had advanced degrees i.e. BA LLB (Law), ACCA (accounting), BSc Honors in Agriculture and MA English.

FIGURE 5: SAMPLE DESCRIPTION





4.2 How does the Arthi operate?

The arthi lending for agriculture in Punjab operates out of the commodity market rather than his local village[14]. This creates efficiency and economies of scale for the arthi: the market is the central place for interaction of all players involved in the agriculture supply chain, making it a convenient place for the farmer to interact with various agents and service providers. It also enhances access to information, eases recovery due to availability of institutional mechanisms, and increases opportunities to expand the business. Arthis operating in the commodity markets are known as 'commission agents' because they charge their fee as a percentage of the sale price of the farmers' produce. This is their commission for services rendered. Each of them is registered with the market committee which issues them a license to operate in the market. Technically, their business is governed by the government regulations, rules laid down by the market committee and the conduct guidelines issued by the association of arthis (*anjuman e arthian*) to which all arthis in a market belong.

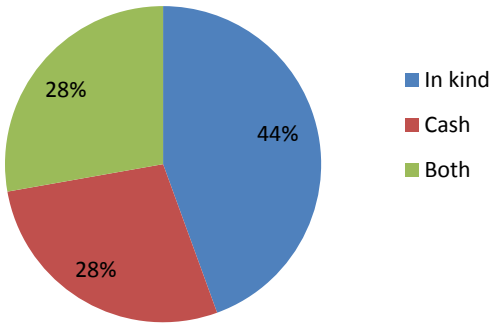
An arthi's runs his business from a small shop in the market, displaying his name and shop number (Exhibit 3 shows a commission agent's shop in the Okara grain market).

[14] Previous studies have documented different types of moneylenders operating in the informal sector, serving different needs of the rural population. These include the commission agents (the arthi we are looking at in our study), input dealers, landlords, farm machinery holders, moneylenders, shop keepers, feed dealers and several others. Whether one type dominates the other in the credit market varies across regions. The irrigated/semi-irrigated areas where we have focused our efforts are dominated by commission agents. (Irfan et al., 1999)

EXHIBIT 3: A COMMISSION AGENT'S SHOP IN OKARA'S GRAIN MARKET

Mode of Lending: Arthis lend both in cash and in-kind (Figure 6). There are some that prefer one mode over the other while five out of the eighteen interviewed for this study said they lend in both forms. Preference of one mode over the other seems to be driven by scale of business of the arthi and preference of both the parties. In-kind lending refers to provision of inputs on credit. An arthi involved in in-kind lending will provide inputs (generally limited to fertilizers, pesticides and diesel) to the farmer. This means that the arthi will have a relationship with one particular input supplier and his borrower will be bound to purchase that brand.

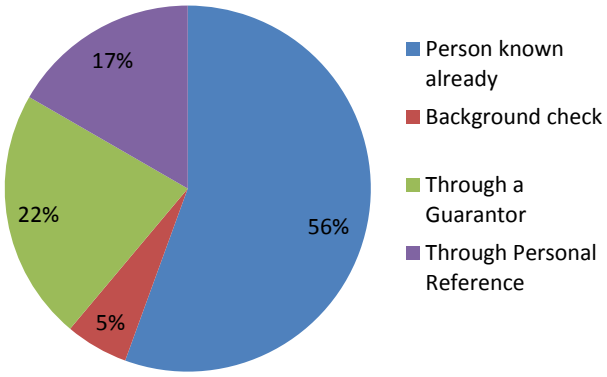
Figure 6: Mode of Lending



Selection of Borrower: Most arthis work with the same clients over many years. Many have been dealing with previous generations of current clients and claim to know majority of their borrowers 'from before'. These are residents of the same area and are known to the arthis because they all operate in the same market. This is corroborated through

interviews with the farmers. Only one farmer stated that he had met his arthi through 'self introduction'. The remaining either had been working with him for a long time and considered him a family *aarth* or had a personal relationship with him (8), shared a common village with their arthi (4) or got introduced through a friend (2). In case of new borrowers, an arthi requires that the person bring a personal reference of someone known to the arthi. This person informally confirms that the potential borrower is trust worthy and in some cases also acts as the guarantor (see Figure 7).

Figure 7: Borrower Selection



It is not usual for a farmer to switch from one arthi to another and most continue to work with the same arthi for long periods: in our sample, on average, a farmer spent nearly 70 percent of his farming life with the same arthi. Only one respondent claimed to change his arthi often whereas one stated that he switched recently as the previous arthi could not provide a loan large enough to meet his needs.

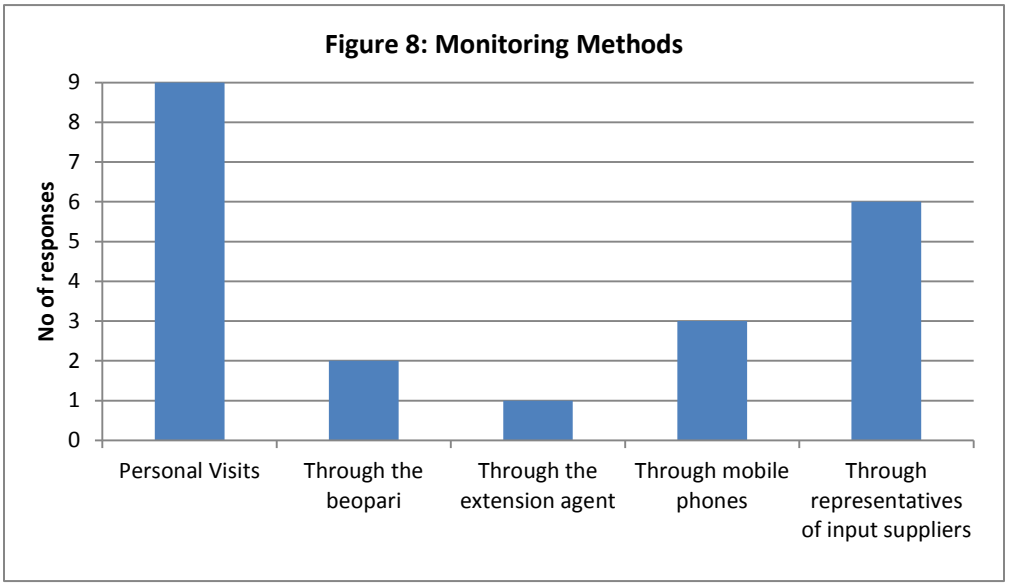
Terms of the Advance: The farmer mostly approaches the arthi at time of sowing to finance his inputs. All players in the market are well aware of the average cost of cultivating an acre of land with a particular crop. Thus the main driver of loan amount is the crop acreage of a particular farmer. The average cost of production of an acre of each crop in our sample is as below:

- Cotton: approximately PKR 40,000
- Maize: approximately PKR 33,000
- Rice: approximately PKR 34,700
- Wheat: approximately PKR 27,000

Once the decision on loan amount is taken, the arthi takes very little time in making the funds available to the farmer. Two thirds of the arthis in our sample disbursed on the spot whereas the rest did so within 7 - 10 days. The loan term is one crop cycle, the length of which varies from one crop to another. Nearly 80 percent of arthis in our sample were lending for two crop cycles in one year whereas the rest were lending for two to three cycles. The advance is repayable in lump sum at the time of harvest when the farmer will bring his produce to his arthi for sale.

The advance is obviously tied to the sale of produce. But in addition, 47 percent of the arthis in our sample demanded post dated cheques from the farmer. Since a bounced cheque is a punishable offence by law, the arthis have adapted it as their core hedge against default. In addition, some arthis (29 percent in our sample) also demand personal guarantees from a third party. Other than this there is no security or collateral demanded from the farmer.

Once the loan is disbursed, the arthi monitors the farmer over the cycle of the crop. Extent of monitoring varies. Some use personal visits whereas others rely on third parties for information such as the village beoparis or agents of input suppliers (such as pesticide companies) (Figure 8). Interviews with farmers also corroborates this information: 8 of the 13 that responded to the question cited personal visits as the mode of monitoring whereas five mentioned agents of input companies or extension service providers as doing this job on behalf of the arthi. Besides this arthis in our conversations mentioned that cell phones have made it quite easy to communicate with farmers (and other players), so it is not difficult to keep up to date.



Note: Since there multiple responses were possible, number of responses is greater than 18 (number of respondents).

Recovery of the loan is made at the time of sale of the produce. As explained in Section 3 above, the farmer brings his produce to his arthi's shop where an auction is facilitated by the arthi. The deal is struck between the arthi and the pukka arthi (or whoever is the buyer of the crop based on the highest bid). The buyer pays the arthi who in turn pays the farmer after deducting the 'deductables' (his principal advance amount, commission and payments to the pallidar and auctioneer).

4.3 Income Stream of the Arthi

The arthi works on commissions. Commission rates vary from market-to-market and from crop-to-crop. Of the markets surveyed as a part of this scoping study, the maize and the rice markets usually had a higher commission rate as compared to the cotton and wheat markets. In the maize and the rice markets, the commission rate varied from 3.5 percent to 5.5 percent of the price at which the produce is sold, whereas the commission rate in the cotton and wheat markets were 1 percent.

In the maize and the rice market, the arthi is responsible for the labor costs relating to the transactions involved in the market. This is not the case in the wheat and cotton markets, where these costs are

responsibility of the farmer or the pukka arthi. Hence these costs bite into the seemingly higher commission of the kacha arthis in the maize and rice markets. Also the role of pukka arthi seems to be a bit different as well. In the maize and the rice market, the pukka arthi is only an arbiter between market (kacha arthi) and the production facilities. Whereas, in the cotton and wheat markets, pakka arthi also pays a one percent commission to the kacha arthis to secure the produce that they have procured. This means that the kacha arthi in the wheat and the cotton markets earn, effectively, a two percent commission on the produce that they acquire from the farmer. So in essence, the costs associated with the kacha arthi in the wheat and cotton markets is less, as compared to the maize and the rice markets, and the additional revenue from the pukka arthi in the former is also an additional revenue for the kacha arthi.

To calculate the annual interest rates charged by the arthi, we have used assumptions on input requirements per acre for the four crops based on information collected through our interviews. These are shown in Table 7 below. Table 8 shows the premium charged by the arthi to the farmer on cash price of the inputs. Seeds are not covered since most farmers purchase seeds on cash and do not use the arthi.

TABLE 7: INPUT REQUIREMENTS PER ACRE

	Cotton	Rice	Maize	Wheat
DAP Fertilizer	1.5	1	1	1
Urea Fertilizer	4	2	4	2.5
No of Pesticide Sprays	6	1	1	2
Pesticide Volume	1000 ml	500ml	500ml	300ml

TABLE 8: PREMIUM RATES ON VARIOUS INPUTS WHEN PURCHASED ON CREDIT

	Sale Price (on Cash)	Premium Charged when on 6 Month Credit
DAP Fertilizer	PKR 3,920	25%
Urea Fertilizer	PKR 1,650	25%
Cotton Pesticides	PKR 650	30%
Maize Pesticides	PKR 350	30%
Rice Pesticides	PKR 450	40%
Wheat Pesticides	PKR 1000	25%

On the basis of these figures, the following table lists the implicit interest rate[15] that the Arthis charge the farmers on advance inputs.

[15] We call it implicit because the arthis and even farmers do not call it 'interest' but prefer to use words like premium and commission.

TABLE 9: ANNUAL INTEREST RATES ON INPUTS

	Cotton	Maize	Rice	Wheat
Implicit Rate of Interest	52.4%	50.4%	51.0%	50.0%

Besides providing inputs on credit, the arthi also manages the sale of his client's crop and charges a commission for his service. The commission rates is higher for clients that have taken credit as compared to farmers that only use him for selling their produce in the market. These rates, calculated on per acre basis, are shown in the table below.

TABLE 10: PRICES & COMMISSION RATES

	Cotton	Maize	Rice	Wheat
Average Price for 40 kg	Rs. 2600	Rs. 905	Rs. 1180	Rs. 925
Average Yield (40kgs/acre)	30	63	47	40
Commission (%)	2%	4%	3.75%	2%
Commission (%) for Borrower s	3%	6%	5.75%	4%

Note: Commission rates for maize and rice can be as high as 5.5% but also lower at 3.5%.

In order to calculate total interest rate, the differential in commission for borrower needs to be added to the implicit rates shown in Table 9 above. The total annualized implicit interest charged by the arthis by crop is shown below.

TABLE 11: ANNUALIZED TOTAL INTEREST CHARGED BY THE ARTHIS (PREMIUM ON INPUTS PRICES + EXTRA COMMISSION DUE TO CREDIT FACILITY AVAILED BY THE FARMER)

	Cotton	Maize	Rice	Wheat
Implicit Rate of Interest	61.9%	71.48%	80.7%	67.1%

These rates are in line with findings of previous studies (see section on interest rates in Section 2 on literature review). Given that they are based on information shared by the arthis, although triangulated through interviews with farmers and input dealers, these could be interpreted as conservative. In addition, markets focused upon during the project are the fairly well developed and large markets. It can be safely assumed that rates would be higher if remoter and smaller markets.

Arthis do vary their rates across farmers, mostly based on the financial health of the farmer. Weaker ones are charged more. There is great reluctance to use the word interest due to religious reasons. Thus even when cash is lent, it is written down in the books in an in-kind equivalent.

Box 4: The Special Case of Wheat

Wheat is one of the most important food grains in Pakistan, considered the staple food of majority. It is thus expected that the farmer will only bring wheat that is in excess of his personal year-long consumption to the market. An arthi knows this, and hence is more reluctant to lend out on wheat crops because of the far lower rate of return on his investment. Also the credit needs in the wheat season is not as dire as the farmers are usually cash rich from their cotton crop, as well as the significantly less amount of inputs required for wheat vis-à-vis cotton. Wheat usually only requires half the fertilizer needed for a cotton crop, and only one spray as compared to 4-7 for cotton. Hence there is generally less need for credit, as well as a less desire to lend, for the wheat crop as compared to the cotton crop. Cotton crop is more profitable, as well has less leakages as compared to the wheat crop because of the nature of the cash crop.

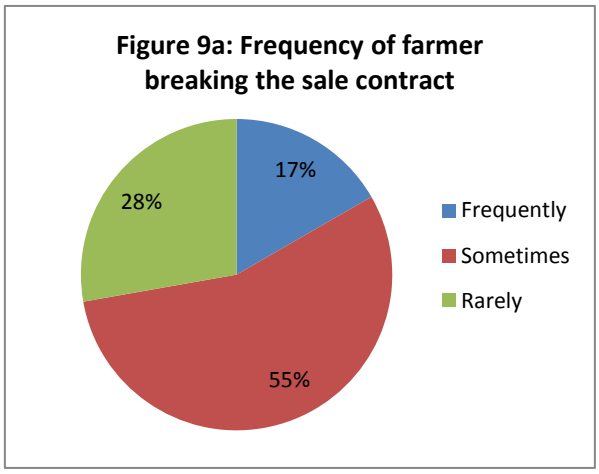
Wheat is also considered to be "political" commodity, and hence currently the only major crop where the government directly intervenes in the market by purchasing wheat from the farmers and setting a support price. This is causing huge inefficiencies in the market, and the price signals are not being portrayed to the farmer. Interviews with farmers show that the incentives in place to farmers do not really reach them in practice. The support price announced by the government for example is rarely what the farmer nets at the end of the day due the bureaucratic hurdles and corruption/collusion between PASSCO officials and large farmers/wholesalers. There are delays in release of payment, procedures are cumbersome and very difficult for the farmer in terms of financial and time requirements. So despite the government spending a huge amount of money in the area, farmers are still substituting wheat for new strains of cotton, because it is far more profitable for them to do so.

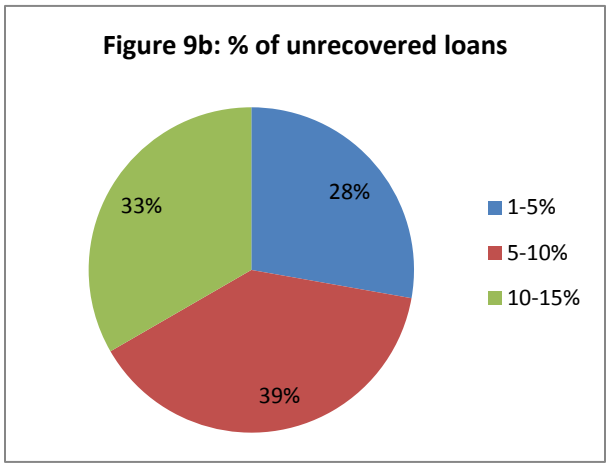
4.4 Risk Management

The general perception is that the arthis have honed their risk mitigation strategies over time and do an excellent job at assessing and managing credit risk. This appears to be true. He does so by first identifying the right borrower and ascertaining his credit needs accurately, and finally controlling the farmer's cash flows by binding the farmer to sell the produce through him. Only three arthis in our sample said that the farmer frequently break the contract that binds them to sell the crop to his arthi. This is also reflected by the figures on loans that are not recovered (Figure 9). On average, 8 percent of the loans made by the arthi run into problems. Even these do not convert into defaults. In comparison to the banking sector net NPLs at 6.2 percent of net loans despite being collateralized, this is impressive. The performance is even better if compared to specialized banks whose net NPLs stood at 16.2 percent of net loans in June 2012. Microfinance sector, which also does clean lending in agriculture posted portfolio at risk of less than five percent in 2011, showing that the perception of high risk related to

agriculture lending, especially to small farmers amongst the commercial banks, is not founded in experience[16].

In the rare event of a farmer willfully breaking the sale contract and selling his produce to another arthi (considered as fraud), the affected arthi usually seeks assistance from the arthi association (10/18) while some also try to directly resolve the matter with the other arthi (3/18) or employ any other way (4/18). Since most arthis have a stable client base over time, if a new client approaches them they make an effort to check if he is breaking a previous commitment by selling to him. Such behavior is not encouraged and since the arthis in a market have long term interests in maintaining good relations within their own community, they tend to cooperate with one another in such situations. According to the arthis, generally a farmer will not try to cheat by selling the entire produce to some other arthi but rather attempt to make a part sale.





Usually the reasons for issues in repayment are beyond the control of the farmer such as crop failure due to some disaster or pest attack, or a drop in the price of the crop in a particular year. Even then the farmer is usually in a position to pay part of his liability. The remaining amount is rolled over till the next harvest comes in. This, according to arthis, is the only way they would ever get their money back and continue doing business with the farmer. Interviews with farmers confirms this behavior – all farmers in the sample said that the arthi gives them more time if they are unable to pay back the loan at the time of harvest. Discussions with the farmers showed this was clearly a major differentiating factor between banks and arthis: while banks' processes push them to begin recoveries from farmers even in cases where there is no intentional default and classify loans as soon as repayments falter, arthis provide a customized service to the farmer. The arthi recovers what the farmer can give at the time, reschedules the outstanding amount and also extends a new loan to allow the farmer to plant his next crop.

Besides the farmer, the arthi also faces the risk of non-payment by the pukka arthi/wholesaler that purchases the output through auction. In these cases, the arthis rely on cheques provided by the buyers. In fact, the guide of the arthi association of Khanpur states that action against defaulter firms will be

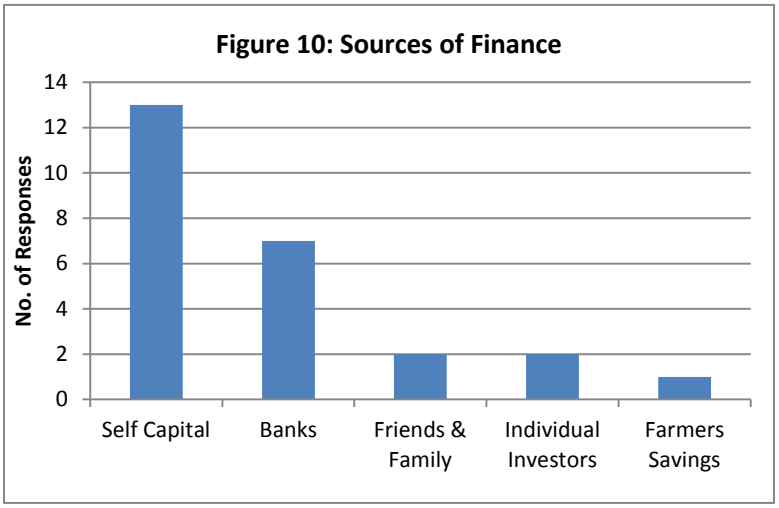
[16] Sources: State Bank of Pakistan and Pakistan Microfinance Network.

taken on the basis of cheques. It thus seems that post dated cheques are becoming an important tool for managing risk in the commodity markets of Punjab.

4.5 Sources of Finance

Most arthis have deployed their own capital in the business. Some have also borrowed from banks for onward lending. Individuals also provide funds to the arthis with expectations of a return on their funds (see Figure 10).

11 of the 17 arthis that responded to the question stated it was not easy to get financing from banks. Half of them found the process cumbersome and difficult whereas the remaining said they did not have the appropriate collateral. Arthis that had borrowed used various assets as collateral including agricultural land, their personal house and shop. Amount of funds borrowed varied from PKR 0.5 million to PKR 6.0 million. Rates of interest on these loans also varied: one respondent cited the rate as high as 27 percent but the remaining ranged between 14 percent to 18 percent.



Note: Since there multiple responses were possible, number of responses is greater than 18 (number of respondents).

Generally the arthis are well aware about bank services and are used to dealing with banks. Nine respondents claimed they worked with more than one bank at a time. They also felt that it would be a good idea to join hands with banks (12/18) but half of them were not sure if this would be practically possible or feasible. Similarly farmers seemed enthusiastic about the idea, especially because they felt this would break the monopoly of arthis and lower margins charged by the arthi (see Box 5 for findings about use of formal financial services by farmers in our sample).

Box 5: Use of formal financial services amongst farmers

17 out of the 18 farmers had bank accounts. These were used for either saving money or accessing a loan. 11 farmers had borrowed from a bank either to purchase farm machinery or for production purposes (such as land preparation or purchase of fertilizer). Average loan amount was PKR 357k (excluding one large farmer in the sample that had borrowed about PKR 2.6 million) and the rates of interest varied between 9 percent and 18 percent according to the farmers. Both passbooks and gold were used as collateral when borrowing from banks. These farmers had worked with a range of banks including the specialized ZTBL and PPCBL, public banks such as National Bank of Pakistan and Bank of Punjab as well as private commercial banks such as UBL, HBL, ABL, Faysal Bank, Bank Alfalah, and Bank Al-Habib.

Nearly 75 percent cited length and cumbersome documentation as a problem when dealing with banks. Other challenges included a) not having the right collateral (30 percent), b) high interest rate (30 percent), and c) corruption (17 percent). All farmers said the arthi was easier to work with and thus they continue borrowing from him as opposed to banks. One farmer said he was afraid of banks. This fear is usually driven by the fact that while in case of crop failure the arthi rolls over the loan, banks resort to taking possession of assets. For a farmer whose only major asset is usually his land, the risk appears too high.

Farmers in Khanewal and Khanpur mentioned the issue of corruption when dealing with banks, especially ZTBL. According to them, a farmer has to pay a large bribe to get his loans approved. Also, the pre-approved limit that ZTBL has on how much loan can be given out, per acreage, has not been updated for a long time. Given that there has been a consistently higher inflation rate in the country for the last decade, the inputs prices have increased dramatically. So, even if the loan is approved, it is not enough to finance the whole farming needs. The farmer has to deal with the informal moneylenders, in most cases.

4.6 Other Services

As mentioned above, the arthi facilitates sale of the farmer's produce. However, one objective of this study was to understand whether the arthi offers any other value added services to the farmer. For example, does he play any role in dissemination of information about modern farming techniques or does he facilitate the farmer socially by making payments on his behalf in emergencies (such as hospital bill or children's school fees)?

Nearly all arthis said they do lend to the farmer in emergencies but their core business is lending for agricultural activities. It is only on the rare occasion that they advance money for other needs. They do not provide social services like paying school fees etc.

In terms of knowledge about technology or modern techniques of farming, only two out of the eighteen respondents had ever attended any training on farming to improve their own knowledge. Of these one had experimented with new technology. Five respondents said they looked out for new developments and shared it with their clients. It seems that the arthis information about farming methods or developments is no different from the average farmer. Their advisory to the farmer is usually limited to what types of varieties to plant while few also advise on issues such as soil testing, land leveling or pest management. The general response to possibility of arthis providing advisory is that the farmer already knows what is best for his land.

Information or training about farm management and use of appropriate inputs seems to mostly flow from the input manufacturers. Their agents travel to villages to disseminate information amongst farmers and market their product.

The level of education amongst the arthis does seem to be improving, and there were some well-educated arthis in the market. These are also the ones that seem more open minded about new businesses practices.

4.7 Perceptions about the Arthi

Media and literature has often portrayed the arthi as an exploitative agent, one that abuses his power for personal gain at all costs. Reality however is not so dark. Clearly the arthi charges a significant commission for his services but he also provides a service that the formal financial sector has failed to provide so far. Perceptions about the arthi are either neutral or positive amongst the farmers: 11 out of 18 farmers felt he played a positive role in his village whereas four felt he did not have any positive role. Two respondents said he was their only choice. Only one respondent had ever been part of any conflict with the arthi. All the pukka arthis felt they had good relations with the arthis.

5 Conclusion

It is clear that the informal sources of credit like the arthis still dominate the agriculture finance landscape in Pakistan. This is not because the farmers, at least in the irrigated heartland of Punjab, do not have access to formal financial institutions like banks. All farmers met during this study had bank accounts and many had at least one experience of borrowing from either a public or private bank. The issue seems to be that of appropriate products and processes: the informal lender remains the most convenient and flexible source of finance for the farmer. Despite charging rates of interest that range anywhere between 70 percent to over a 100 percent compared to the banks' rates of 12 percent to 18 percent, the farmer chooses to deal with the arthi. Any serious attempt on channeling bank finance to the farmer, especially the small and medium farmer, needs to learn from the arthi. This study has attempted to provide such information.

Arthis are not a uniform set but consist of different types offering a range of services depending upon the market they serve. There are several types of arthis working in Punjab but largely divided into the kacha arthis (commission agents) and the pukka arthis (wholesalers). The former deals directly with the farmer and is involved in providing credit in cash or in-kind. He also facilitates the sale of the farmer's produce. The pukka arthi buys the crop, mostly through an auction, from the kacha arthi and takes title to the produce. This study focused on the commission agents.

Arthis are well aware of the financial institutions and are already engaged in borrowing and saving with commercial banks. Given the overall objective of using the arthis as intermediaries between the farmer and the bank, it is encouraging to see that many of these arthis already have experience of borrowing and saving with a bank. While some had borrowed for their own farming purposes, several had borrowed for investing in the business. The relationship however does not seem to be smooth as over 65 percent of them said it was not easy to get financing from the bank. Although willing to explore possibilities of linking up with banks, they questioned the feasibility of it and were unsure of its practicability.

Arthis financing Punjab's agriculture economy operate out of the province's commodity markets. The fact that the interviewed arthis were not averse to the idea of linking up with banks, it needs to be kept in mind that these commission agents operate mainly in the commodity markets spread across the province. These markets function as the central place where all players in the agriculture marketing chain interact. Given their key role, the government and private players have created various structures to manage their smooth operations. These include two key institutions: the market committees and associations of the different groups, including the arthis. These institutions exert considerable power and influence in the marketplace. The associations of arthis, for example, are registered organizations that are clearly recognized for their role in dispute resolution. Any arthi trying to recover a defaulted loan or settling a payment with a wholesaler relies greatly on the association's support. The arthis in a market thus are a close knit community, and would find it difficult to operate on its own. Thus any intervention that essentially changes the way the arthi operates or threatens his role would meet resistance by the institutions. Engaging with the associations would be important when considering the arthis as possible intermediaries.

Commission agents in a particular market are an organized group, licensed and registered with the market authorities, which are recognized by the government. This makes it feasible for banks to work with them because a) they are legal entities b) possibility of scale is there since the markets provide a central place to reach out to them.

The commission agent largely makes unsecured loans to farmers that are well known to him or come through a personal reference. He has incorporated modern methods of communication and also tools of formal finance in his business model to manage his risk. For example, many arthis ask their clients to provide a post-dated cheque which becomes their hedge against willful default.

The arthi manages his risk well while providing a 'customized' service as opposed to the 'cookie cutter' approach of commercial banks. On average, 8 percent of the loans made by the arthi run into problems[17]. Even these do not convert into defaults. The arthi is sensitive to the fact that in case the farmer is facing a crisis (due to crop failure or some personal circumstances, for example) the loan needs to be rolled over if he wants to ever see his money. This is contrary to what the banks do – they tend to begin the loan recovery process as soon as a loan becomes classified and take possession of collateralized assets which puts off the farmer when dealing with them.

The rates charged by the arthi demonstrate that there is money to be made in agriculture lending to small and medium farmers. With operational costs at less than 2.5 percent of total volume of lending[18], nominal write-offs and interest rates ranging between 62 percent and 80 percent, profit margins for the arthi are quite significant. In addition to earning from credit, the arthi also earns commission from the sale of the produce of his borrower, calculated as a percentage of the sale price of the produce ranging from 2 percent to 4 percent depending upon the crop and his terms with the client.

The personal profile of the arthi seems to be changing, albeit slowly. Although there are some well-educated arthis working in the markets which look out for new opportunities of business as well as technology, most continue to operate in traditional modes. Not many are interested to train in new techniques and pass them on to their clients. Their knowledge about modern farming methods seems to be no more than their clients. It would be unrealistic to expect the arthis to become sources of knowledge and information for the farmers without any training themselves.

Interestingly, no one likes to use the word 'interest'. The arthis claim they do not charge interest because it is un-Islamic and the farmers when asked say they do not pay any interest to the arthi. Some arthis expressed reluctance to working with banks because of the interest issue. The premiums and commissions are justified as being Islamic since they involve some commodity and not plain cash. In places where arthis were lending in cash, these would be converted into in-kind equivalents for purposes of record keeping and converting the transaction into an Islamic one.

These insights clearly show that the traditional banking model is far removed from the needs of the farmer and is not structured to be cost-effective. Demand for credit is continuous and growing with rising prices of inputs and the arthi model runs into issues of achieving scale. To break this deadlock and

[17] Irfan et. al. (1999) estimates that more than half of the overdue loans are recovered by the arthi in the next crop cycle. The ultimate default rate is likely to be less than 6 percent.
[18] Irfan et. al. (1999)

a model that creates a win-win for farmers as well as the banks is needed. One possibility is involving an 'intermediary' that connects the farmer and the banks, and incorporates the arthi's strategies to overcome the current bottlenecks. A model around this idea is proposed below.

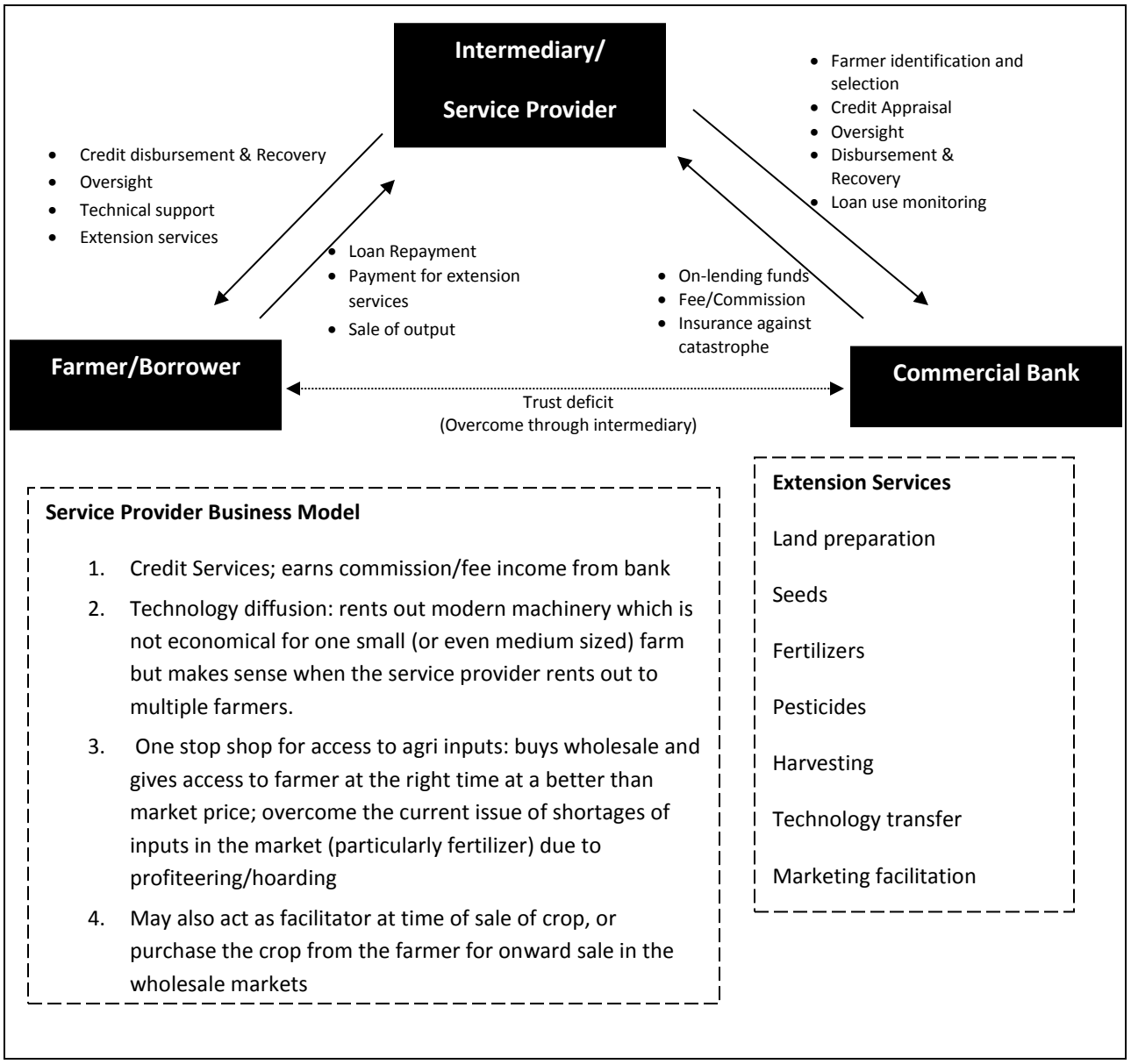
Using an Intermediary to reach the Farmer: Ideas for Pilot

Exhibit 4 below lays out the broad parameters for the model. As documented previously, and re-established in this study, there is mistrust between the farmer and the bank. In addition, the bank's policies, structure and business strategies are not suitable to reach these clients. It is thus proposed that an 'intermediary' be used to connect the bank to the clients. In this tri-party arrangement, the intermediary performs functions of client identification, credit appraisal and need assessment, and disburses the loan on behalf of the bank for a fee/commission. In addition to providing access to loans, the intermediary would also provide the farmer with access to latest farming techniques, modern farm equipment, and inputs – for a fee/rental – that can help increase yield and productivity. Post-disbursement, the intermediary monitors the borrower to ensure the loan is used for the intended purpose and also acts as the loan recovery agent of the bank. In addition, like the arthi the intermediary would also be the point of sale for the farmer's produce. Insurance against catastrophic risks (such as floods or pest attacks) would need to be built into the model as these tend to be the only systemic credit risk.

Thus the intermediary provides services that the arthi currently provides to the farmer, with value-added services (such as access to latest farming techniques, modern farm equipment, and inputs that can help increase yield and productivity). However, he has access to a larger pool of funds that can allow greater scale. The intermediary, like the arthi, would help manage the bank's risk by a) identifying the right client b) correctly assessing his credit needs c) ensuring that loan proceeds are used for the intended purpose d) controlling the farmer's cash flows by managing his crop's sale proceeds. The intermediary's value-added service relating to farm efficiency and productivity would further reduce the credit risk.

Possible intermediaries could be the arthi themselves, or private firms that provide these services. If success can be demonstrated, it can have tremendous implications in terms of not only attracting banks into mainstream rural finance but also spurring economic growth through higher productivity and efficient use of capital in the agriculture sector.

Exhibit 4: Using an Intermediary to reach the Farmer



To conclude, the arthi network is entrenched in the agriculture system. It has survived over centuries and continues to fuel the rural economy. Places where its influence has diminished are generally places where corporate companies have come in to deal directly with farmers on a large scale, thereby eliminating the arthi's role. The arthi is generally perceived as playing a positive role in the rural economy as he provides a service to those who need it. His clients however know that he uses his position to charge a higher price and would welcome a partnership with banks, especially if it means lower rates for them. This study provides some insights into the arthi network and lays the ground for

further research that can explore these issues in more detail. More in depth research and pilots are needed to find ways to leverage the information provided here. Some suggestions:

- Research on the arthi and marketing system in other minor crops, fruit and vegetable markets, as well as other provinces, especially Sindh
- Pilots to test models where arthis are linked with commercial banks
- Pilots to test other intermediaries that could perform the functions that the arthi is performing along with other value-added services such as access to innovative technology, updated market information, agricultural machinery on rent and supply of high quality inputs (seeds and plant varieties)
- Supply-side mapping of commercial banks that are strategically interested in this market and development of products for the target market
- Mapping of supply chains of agriculture produce to a) understand financing gaps for production and development purposes, and b) identify other bottlenecks which, if unresolved, would diminish any intervention on the financing front

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Annex 1: Questionnaires

1. Questionnaire for Arthi

Name: Village (Tehsil):

Education: Cell Number:

Characteristics of Arthi (For Interviewer's Reference Only)		
Main Crop:	Type: Kacha – Pacca	Size: Small - Medium - Large

Section I: Business Profile and Environment

1. **How long have you worked as an Arthi?**

a) Less than 5 years
b) 5 -10 years
c) 10 -15 years
d) 15 -20 years
e) More than 20 years

2. **What is the form of your business?**

a) Sole proprietor
b) Partnership
c) Private company

3. **Business Type**

a) Commission Agent
b) Stockiest
c) Both

4. **How did you enter this business?**

a) New establishment
b) Inheritance / Family Business

5. **Who are your target group clientele?**

a) Small farmer (upto 12 acres)

b) Medium Size farmer (12-25 acres)
c) Large farmer (above 25 acres)

6**. How many farmers are you dealing with?**

a) Less than 40 farmers
b) 40 -60 farmers
c) 60- 80 farmers
d) More than 80 farmers

7. **What other businesses do you have?**

a) Farming
b) Fertilizer and pesticide dealership
c) Seed company
d) Machinery renting (tractor, harvester, thresher, laser land leveler)
e) Stockist
f) Other _____

8. **What are your sources of financing?**

a) Self Capital
b) Friends and family
c) Farmers savings
d) MFIs / banks (at what interest rate?)
e) Private money lenders (at what interest rate?)
f) Individual investors

9. **Was it easy to get finance from the bank?**

a) Yes b) No

10. **Do you deal with more than one bank at a time?**

11. **If you have borrowed from banks, how much and at what margin?**

12. **If you borrow from banks/private money lenders, please state form of collateral you provided**

a) house
b) agriculture land
c) shop
d) plot
e) other_____

13. **What problems have you encountered in accessing finance?**

a) Lengthy and cumbersome process
b) Lack of information
c) Lack of appropriate capital
d) Other

14. **Do you think it would be a good idea for Arthis to join hands with banks to fulfill the credit needs of farmers? (Explain them NIBAF model)**

15**. Describe how government policies affect your business.**

a) Taxes; b) market committee regulations; c) market fee; d) commission

16**. What is the role of the Anjuman-e-Arthiyan?**

a) Commission fixation; b) dispute settlement between arthis; c) helping in recovery of default loans d) Other_____

17. **Describe relations and interactions with other Arthis.**

a) Friendly; b) competitive

18. **Business Potential:**

a) Have you ever attended any training on farm activities to improve your own knowledge? Y/N

b) Do you look for ways to expand your business (by offering other services, or entering a new market, or partnering with another service provider) or are you content with what you have? Y/N

c) Do you look out for new technology and new agricultural practices to share with your clients? Y/N

d) Have you ever experimented with any different technique of farming? Y/N

Section II: Financial Services

1. **When providing credit, how do you select the farmer?**
   a) Know him from before
   b) Background check (how?)
   c) Guarantor
   d) Personal reference

2. **How do you assess the farmer's credit needs?**

a) Previous history
b) Area under crop
c) Income level
d) Crop assessment

3. **What purpose do you lend for?**
   a) Farming activities
   b) Personal consumption
   c) Development purposes (purchase of land asset, tractor, tubewells installation etc.)
   d) Other_____

4. **Do you provide credit in cash or in kind?**
   a) In kind
   b) Cash

5. **Factors affecting the Size of the loan.**
   a) Land holding
   b) Crop under harvest
   c) Personal relationship
   d) Repaying capacity
   e) Collateral

6. **Loan amount**
   a) Rs.10,000-30,000
   b) Rs.30,000-60,000
   c) Rs.60,000-100,000
   d) Rs.100,000-150,000
   e) Other_____

7. **Does interest vary across different borrowers? If yes, on what basis do you decide?**

8. **Do you need any collateral when you lend? If yes, what type?**
   a) Land (Passbook)
   b) Livestock
   c) Post dated cheque
   d) Crop output
   e) Guarantor

9. **How much time you take to disburse the loan?**
   a) At the spot

b) 7-10 days
c) 10-15 days

10. What is the term of your credit?

a) One crop cycle
b) Two crop cycles
c) Three months
d) Six month
e) One year

11. How many crop cycles are there in a year? What is the duration of a crop cycle

12. Credit repayment schedule

a) Lump sum
b) Installments
c) Output sold at harvest

13. Do you monitor the farmer once you have given him a loan?

a) Yes
b) No
c) Sometimes

14. How do you monitor the farmer once he takes the loan

a) Personal visits,
b) Through the Beopari
c) Through the extension agent
d) ICT technology
e) Through the representatives of pesticide and seed companies

15. If farmer default then how does you manage loan recovery?

a) Sale of Produce
b) Take livestock in possession
c) From collateral
d) From guarantor
e) Roll over loan to next crop cycle
f) Police action
g) Pressure from Arjuman-e-Arthiyan

16. Have you interlocked credit with sale of crop output at your shop?

a) yes
b) no

17. If yes, then what is the sale price of the output?

c) Market Price

d) Below market price **(how much lower)?**

18. **What is the mechanism of output price setting?**

a) Open Auction
b) Simple negotiation between seller and Arthi
c) Price set by Arthi.

19. In case of open auction how the base price is set?

a) Set by the Arthi
b) Set by the market committee
c) Set by the big buyers
d) Set in accordance of international prices

20. Are there incidents where a farmer breaks this binding?

a) Frequently
b) Sometimes
c) Rarely
d) Never

21. If farmer sells his crop output to some other arthies, then how you recover your loan amount?

a) from that arthi
b) through anjuman-e-arthian
c) any other way
d) it is not possible to recover the loan

22. What percentage of loans do you NOT recover?

a) 1-5 % b)5-10% c) 10-15% d) Other_____

Section III: Non-Financial Services

1. **Are your operations restricted as commission agent and money lending or do you provide some additional social services to the farmer?**
   a) Helping with children's school fees,
   b) Medical expenses
   c) Settling disputes
   d) Emergencies
   e) Any other social service

2. **Do you provide any of the following advisory services to farmers?**
   a) Land leveling, soil testing, planting time etc
   b) varieties to be planted
   c) better management practices

d) Integrated pest management
e) Crop related particular trainings
f) extension material (booklets, brochures, instruction material)
g) Other _____

3. **Do you provide any of the following facilities to farmers?**
   a) Supplying seeds, pesticides, fertilizers etc (self/dealer)
   b) Procuring at farmers' door steps (self/through beopari)
   c) Storage
   d) Transportation

4. **If the arthi provides inputs on credit, then ask if the client is bound to take the input that the arthi is providing credit for or can he chose which company's input to purchase? If he is bound, is it because the Arthi has a contract with that input supplier? Can he have a contract with more than one input supplier?**

Section IV: Income of the Arthi

1. **How much you have invested in this business at present?** _____ (Millions)

2. **How much you have advanced in cash to farmers at present?**
   a) Crop_____ b) amount _____ (Rs. Millions)

No.	**Loan Size**	**Interest**	**Term**	**Notes**
1.	(e.g. 1 lac)	(e.g.4%)		
2.	(e.g. 3 lacs)	(e.g. 6 %)		
3.				
Total				

3. **How much you have advanced in kind (value) to farmers at present?**
   a) Crop_____ b) amount _____ (Rs. Millions)

No.	Item	Actual Cost (Price at which arthi buys)	Price (Rate at which arthi sells to the farmer)	Premium	Term
1.	Seeds				
2.	Fertilizer				
3.	Pesticides				
4.	Other				

4. **What is your annual turnover from other sources**

No.	Source	Turnover (Millions)
1.	Farming	
2..	Fertilizer & Pesticide Dealership	
3.	Seed Company	
4.	Machinery Renting	
5.	Stockist	
6.	Other	

Expenditure Schedule (Arthi)		
Operating Costs	Amount (Rs/mds)	Total cost
1. market fee		
2. auction fee		
3. license fee		
4. shop rent (including electricity and other charges)		
7. weigh-ment charges		
8. Gunny bags		
Financial Costs		
5. Interest on bank loan		
5. Interest/return to individual investors		
Others		
tax		
9. any other cost (specify)		

a.		
b.		
10. Total cost		

Credit Cost (Arthi)		
Sr.#	**Type**	**Cost per farmer per acre**
1.	Screening costs	
2.	Administrative costs (overhead and variable costs)	
3.	Opportunity cost of funds	
4.	Cost of unrecoverable loans	
5.	Interest cost of delinquent loans	
6.	Any other cost	

Section V: Market Profile

1. How many arthis operate in this market?

2. Is it easy for people to enter this market and work as arthis?

3. Do all arthis provide credit (cash/in kind) at the same rates?

4. Does the arjuman-e-arthiyan have a role in determining the rate at which credit is provided or do they decide themselves?

2. Questionnaire for Farmer

Section I: Personal Information

1. Respondent's Name: Gender: Education:

2. Village (Tehsil):

3. Cell Number:

Section II: Farming Practices

1. **What is the size of your holding?**
   a) Less than 5 acres.
   b) 5-10 acres
   c) 10-20 acres
   d) More than 20 acres.
2. **Is the cultivated land**
   a) Owned _____acres.
   b) Rented_____ acres.
3. **If rented, from whom you rent it? (This is to see if land is rented from arthi)**
   a) Arthi
   b) Neighbouring farmers
   c) Relatives
   d) Other _____
4. **How many years have you been farming?**
5. **What crops do you grow?**
   a) Maize
   b) Rice
   c) Cotton
   d) Wheat
   e) Other_____
6. **What was your yield per acre of crop?**

   ----------40kg per acre.
7. **What was price of your produce per 40 kg?**

8. Do you get any farm advisory/ technical services? If yes, who gives you technical advice?

a) Govt. Officials extension services
b) Private sector input producing companies
c) Arthi
d) Other _____

9. Do you need any crop specific training? If yes, which of the following is most important?

a) Crop production technology
b) Plant protection
c) Output handling
d) On banking & financial services
e) Record keeping and financial management
f) Others

10. Crop specific operations information

Operations	**Yes/no**	**source**	**Cost/acre**	**Mode of payment**
1. Use of Laser land leveller		Own /rented		Cash/at crop harvest time
2. Soil testing		Govt. deptt/fertilizer companies		
3.Sowing method		Broadcasting/drill		
4. seed	Amount per acre	Price per bag	source	Term
(hybrid/open pollinated)		a. cash: b. credit:	Self/Seeddealer/arthi/companies/govt. source	Cash/on crop sale
5. Fertilizers	Amount per acre	Price per bag	source	Term
a. DAP b. Urea c. SSP d. any other		a. cash: b. credit:	Arthi/fertilizer dealer/beoparI	Cash/on crop sale
6.Pesticides	Sprays Per acre	price per spray	source	Term
		a. cash: b. credit:	Arthi/pesticide dealer/ pesticide	Cash/on crop sale

			companies	
7.Marketing/Selling Mode	Price/40kg			
Arthi				
Village beopari				
Contract selling				
Directly to factory				

Market Expenditure Schedule (Farmer)						
Expenditures	Wheat	Cotton	Rice	oilseeds	Maize	Others
Commission/arthi						
pallidary						
Labour (loading & unloading)						
Auction fee/dallali						
Munchaniana						
Withholding tax						
Any other (transportation, meal etc)						
Total Exp.						

Section III: Formal Finance

1. **Do you have a bank account? If yes, for what purpose do you have a bank account?**
   a) To access a personal and business loan
   b) To save and deposit money
   c) To invest for profit or income
   d) To secure loan from the arthi (Providing a post-dated cheque)
   e) Other _____
2. **Name of account holder bank**
3. **Have you ever borrowed from a bank?**
   a) Yes

b) No

4. What purpose did you borrow from the bank for?

a) Production purposes
   a. Land preparation
   b. fuel
   c. seed
   d. fertilizer
   e. Pesticides

b) Consumption purposes
   a. Food
   b. Marriages
   c. Births
   d. funeral
   e. disease

c) Development purposes
   a. Farm building
   b. Tube well
   c. Farm machinery

d) Other _____

5. What was the size of the loan? (rupees)

6. What was the interest charged on the loan?

7. Did you provide collateral to the bank? If yes, describe form.

8. What are the problems that you face when accessing credit from banks?

a) Lack of information
b) Too far from village
c) High interest rate
d) Religious reasons
e) collateral / Pledge of land
f) Lengthy documentation procedure
g) Other _____

9. Which of following problems have you faced during loan repayment?

a) Crop Failure
b) Too many other debts

c) Didn't have enough money
d) Bank overcharged and decided not to pay
e) Suffered a financial loss or theft
f) Other _____

10. Do you think it would be a good idea for the arthi to join hands with the bank to fulfil your credit needs? Explain

11. Have you ever used ATMs? If yes for what purpose?

a) Money withdraw
b) Money transfer
c) Utility bill payment

Section IV: Informal Finance (Relationship with the Arthi)

1. What informal sources of funding do you use?

a) Arthi
b) Relatives and friends
c) Local shop keeper
d) Other _____

2. Do you borrow from the arthi? If yes what is the purpose?

a) Farming activities
b) Personal consumption
c) Both of a) and b)

3. In what form did you take the loan?

a) Cash
b) Inputs on credit
c) Both

4. How did you come to know about this arthi?

5. How long you have in relation with the same arthi?

6. **Do you always borrow from the same arthi?**
7. **Why do you borrow from the arthi (as opposed to banks)?**
    1. More reliable
    2. Easy to work with
    3. Afraid of bank
    4. Lack of colletaral
    5. Other _____
8. **How many times have you borrowed from the arthi in the last one year?**
9. **What is the size of the loan that you last took from the arthi?**
    a. Rs.10000-30000
    b. Rs.30000-60000
    c. Rs.60000-100,000
    d. Rs.100,000-150,000
    e. Other_____
10. **How much interest have you been charged on that loan?**
11. **How was the rate of interest determined? Is the rate negotiable?**
12. **Did you require a credit guarantor or collateral to get the loan from the arthi? If yes what kind?**
13. **How quickly does the arthi disburse the loan?**
    a) 1 Day
    b) 1 week
    c) 1 month
14. **Once he has disbursed the loan does the arthi follow up? If yes, how?**
    a. Personal visits
    b. Through the Beopari
    c. Through the extension agent
    d. ICT technology
    e. Through the representatives of pesticide and seed companies
15. **How do you payback your loan?**
    a) Lump sum
    b) Instalments

c) Output sold

16. Have you ever defaulted on a loan taken from an arthi? If yes, what steps did the arthi take in dealing with your default?

a) Moral persuasion
b) Give you more time
c) Contact the guarantor
d) Sale collateral
e) Pressure through arthi association
f) Other _____

17. Does the arthi provide any other service apart from financing the crop?

a) Crop related technical services
b) Social services
c) Any other

18. If he takes inputs on credit, ask whether the Arthi offers him a choice in the type of input or is he bound to purchase what the arthi is offering? If this usually good quality input or does the arthi sell him a low quality input?

19. How do you market/sell your produce?

a) Mill owner's agent
b) Arthi (commission agent)

20. Are you bound to sell your produce back to the arthi or you can also to a different Arthi?

b. Yes
c. No

20. Do you think the arthi plays a positive role in your village?

21. Have you ever witnessed any conflict with the arthi? Describe

3. Questionnaire for Pukka Arthi

Name: Village: Education: Cell Number:

Section I: Business Profile

1. Please tell us how a pucca arthi operates?
2. How long have you worked as a pucca arthi?
3. How did you enter this business?
4. Do you work alone?
5. How much you have invested in this business?
6. Do you have any other businesses?
7. How many kacha arthis are you currently buying output from?
8. Why do you buy from the kacha arthi and not the farmer directly?
9. What crops do you buy?
10. What do you do with the output that you have purchased? (e.g. stock, purchase for exporter/factory)
11. What are your sources of financing? (e.g. self, friends and family, MFIs, banks, government, exporter/factory, money lenders)
12. If you borrow from banks, please state whether you provided collateral and at what rate of interest you have borrowed?
13. Do you have a credit line with banks?

Section II: Relationship with the Kacha Arthi

1. How long have you known the kacha arthi you do business with?
2. How did you decide to go into business with him? (Do you know him from before and if yes, then in what capacity?)
3. Do you provide any advance to the kacha arthi, or any other service?
4. Do you buy the output directly from the kacha arthi or does the kacha arthi facilitate your exchange with the farmer?
5. At what price did you purchase the output?
6. How did you determine this price?
7. At what price you sell the produce?
8. Mode of payment to arthi (at purchase time/credit (specify time)
9. Describe your relationship with the kacha arthi.
10. Describe your relationship with the farmer.
11. Have you ever had any conflict with the kacha arthi you do business with? What about and how did you resolve this?

Section III: Income of the Pukka Arthi

1. What is your annual turnover? _____ (Millions)

Expenditure Schedule (Pucca Arthi)		
Type	Amount (% or Rs)	Total cost
1. Commission to kacha arthi (Rs./100 Rs.)		
2. Total value of output traded (Rs.Million)		
1. labor (pallidar, loader/unloader,sweeper etc)		
2. market fee		
3. auction fee(dallali)		
4. license fee		
5. shop rent (including electricity and other charges)		
6. tax charges		
7. transportation charges		
8. weighment charges		
9. Gunny bags+sotli		
10. any other cost (specify)		
a.		
b.		
11. Total cost		

4. Questionnaire for Input Dealer

Name:	Village:	Tehsil:
Age:	Education:	Cell Number:

1. **What is the form of your business?**
   d) Sole proprietor
   e) Partnership
   f) Private company

2. **Who are your target group clientele?**
   d) Farmer
   e) Arthies
   f) Others

1. **What other businesses do you have?**
   g) Farming
   h) Arthi
   i) Seed company
   j) Machinery renting (tractor, harvester, thresher, laser land leveler)

2. **How much are you invested (Capital) in this business?**

3. **What are your sources of financing?**
   g) Self Capital
   h) Friends and family
   i) Arthi
   j) Private Money lenders
   k) MFIs / banks
   l)
4. **If he deals with Arthis, ask how does he select the arthi that he works with? Does one arthi usually deal with only one input dealer, or does he have arrangements with many input dealers?**

Input Dealer services information

S. No	Particulars	Purchase Price			Sale Price		
		Cash	Credit	Terms of Credit	Cash	Credit	Terms of Credit
1.	**Seeds**						
a)	Hybrids						
b)	Open pollinated						
2.	**Chemical fertilizers**						
a)	Urea						
b)	DAP						
c)	SSP						
3.	**Pesticides**						
4.	**IPM material**						
5.	**Small equipments (sprayers, power dusters etc)**						
6.	**Irrigation equipments (motor, pumps, sprinklers etc)**						
7.	**Others (if so, specify):**						