

## **Improving Framers Access to Finance: Reforming the Ginning Industry role in Cotton Value Chain**

Khalid Mushtaq & Muhammad Asad ur Rehman Naseer<sup>1</sup>

### **Abstract**

Though Pakistan's agriculture sector forms the backbone of the economy, yet it faces stagnant yields and declining productivity growth. If this has to improve it requires investments in modern production technology, access to modern farming techniques and extension services. All this requires flow of financing into the rural economy. Various initiatives in terms of providing enabling environment for flow of credit and enhancing rural branch network have been taken by SBP which resultantly increased agri. credit disbursement to the farming community. Despite these concerted efforts, there is still a huge supply and demand gap of agri. credit as banks are meeting around 40% of the credit requirements of farmers. High transactions costs, high risk and corporate bias are the mainly quoted reasons that keep banks away from extending financial services to agriculture sector. This necessitates developing a viable business case for banks that agriculture is a viable business proposition for extending financial services. Therefore, present study aims to map and study the opportunities for banks in cotton value chain in Punjab, Pakistan. Further, to capitalize upon the banking sector liquidity and keeping in view the constraints faced by banks, the study will help to identify is there any opportunity to develop a hybrid credit delivery model based on rural banks franchise by introducing innovative partnership with local processors i.e., cotton ginners.

---

<sup>1</sup> Associate Professor and PhD Scholar respectively at Institute of Agricultural & Resource Economics, University of Agriculture, Faisalabad, Cell Phone: 0300-6735714, E-mail: [khalidmushtaq69@yahoo.com](mailto:khalidmushtaq69@yahoo.com); [khalidmushtaq@uaf.edu.pk](mailto:khalidmushtaq@uaf.edu.pk)

## **1. Introduction**

Agriculture continue to be a fundamental instrument for sustainable development and poverty reduction (Azeem *et al.*, 2016); yet, ‘financial constraints in agriculture remain pervasive, and they are costly and inequitably distributed, severely limiting smallholders’ ability to compete’ (World Bank, 2008). Volatility in agriculture commodity prices have exposed the vulnerability of agricultural production and call for increased investment in agriculture at all levels (Gallai *et al.*, 2009). The question is how the right amount of investment can be acquired, particularly in a challenging milieu where financial uncertainty causes a reduction in available resources along with increased fear and scrutiny of risk (Irungu, 2013). An answer to addressing these constraints goes beyond conventional measures since agriculture has always been difficult to finance through formal financial institutions and approaches (Rajan & Zingales, 2003).

The environment for agricultural finance is further influenced by the growing concentration of control in the agricultural sector. Driven by gains from economies of scale and globalization of the food chain along with access to resources, multinational and other interconnected agribusinesses have a greater impact in a sector that is characterized by increasing vertical and horizontal integration (Henson & Cranfield, 2009). The consequences of tightening integration are profound, especially for smallholders and others who are outside of the interlinked chains. In short, agriculture is evolving towards a modern, extremely competitive system driven by consumer demand for higher value, more processed products, and consistent quality and safety standards (Kariuki, 2016). Hence, enhancing smallholders’ productivity, competitiveness and their participation in these global value chains have been noted as priorities of the agriculture-for-development agenda (World Bank, 2008).

Understanding value chain finance can improve the overall effectiveness of those providing and requiring agricultural financing. It can improve the quality and efficiency of financing agricultural chains by: 1) identifying financing needs for strengthening the chain; 2) tailoring financial products to fit the needs of the participants in the chain; 3) reducing financial transaction costs through direct discount repayments and delivery of financial services; and 4) using value chain linkages and knowledge of the chain to mitigate risks of the chain and its partners. As agriculture and agribusiness modernize with increased integration and interdependent relationships, the opportunity and the need for value chain finance becomes increasingly relevant (Haq *et al.*, 2013).

SBP has taken various for the smooth flow of financial services to the agriculture sector which resultantly increased agri. credit disbursement to the farming community. Despite these concerted efforts, there is still a huge supply and demand gap of agri. credit as banks are meeting around 40% of the credit requirements of farmers. High transactions costs, high risk and corporate bias are the mainly quoted reasons that keep banks away from extending financial services to agriculture sector. This necessitates developing a viable business case for banks that agriculture is a viable business proposition for extending financial services. Therefore, present study aims to map and study the opportunities for banks in cotton value chain in Punjab, Pakistan. Further, to capitalize upon the banking sector liquidity and keeping in view the constraints faced by banks, the study will help to identify is there any opportunity to develop a hybrid credit delivery model based on rural banks franchise by introducing innovative partnership with local processors i.e., cotton ginners.

## **2. Methodology**

### ***2.1. Study Area and Sample Size***

The study was conducted in the Bahawalpur district of Punjab, Pakistan. It is the leading cotton producing district of Pakistan with annual production of 1144 thousand bales (GOP, 2014). The survey was conducted from the four tehsils of Bahawalpur i.e. Ahmadpur East, Yazman, Hasilpur and Bahawalpur. During visit we met with all stakeholders by personal interviewing and focused group discussions. Composition and brief description of stakeholders is as follow.

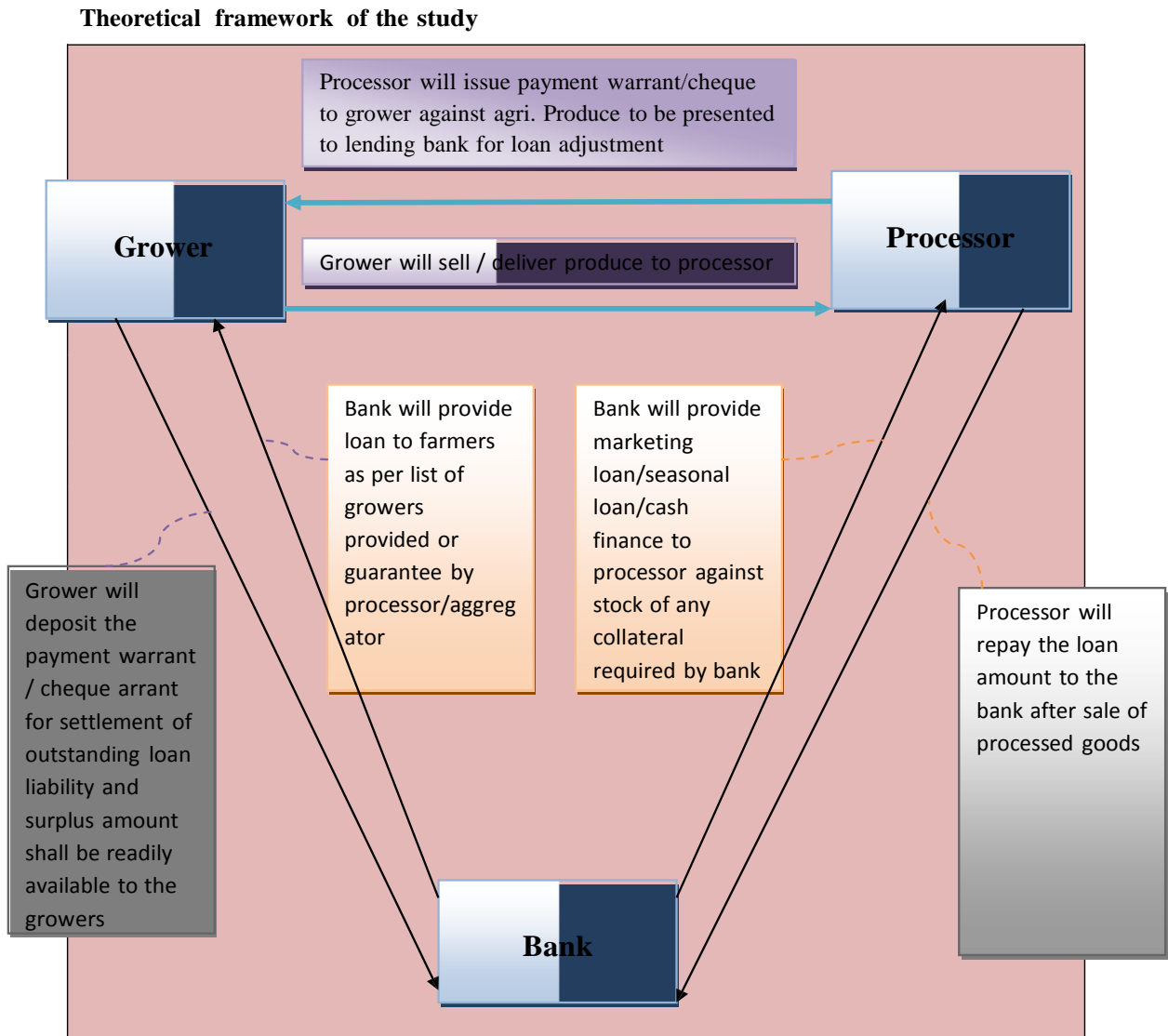
- Farmer – 100 from four (4) tehseels
- Aarthi – Sixteen (16) four of each tehseel
- Input suppliers – 48 (16 Fertilizer, 16 Pesticide and 16 Seed dealers)
- Commercial Banks – 5 District headquarter branches
- Processors/Ginner - at least sixteen (16) from the district
- Agriculture Extension Department, Govt. of Punjab
- Market Committee department

Simple descriptive analysis was made to map the cotton value chain and the role of each stakeholder providing finance of to the farmers.

## ***2.2. Theoretical framework***

The theoretical framework was made keeping in view the SBP's guidelines. These guidelines cover financing to borrowers involved in agri. production both crop and non-crop activities under the explicit guarantee of processors, input suppliers, marketing companies, aggregators, lead firms, traders, exporters, stockiest, etc. and its value addition/processing as per prudential regulations for agri. financing. Banks may adopt these guidelines in the present form or develop product program aligned to their organizational & operational needs and market characteristics, subject to compliance with SBP Prudential & other Regulations for agricultural financing.

**Figure 1: Conceptual framework**



*Source: Adapted from SBP's guidelines for value chain farmer's financing*

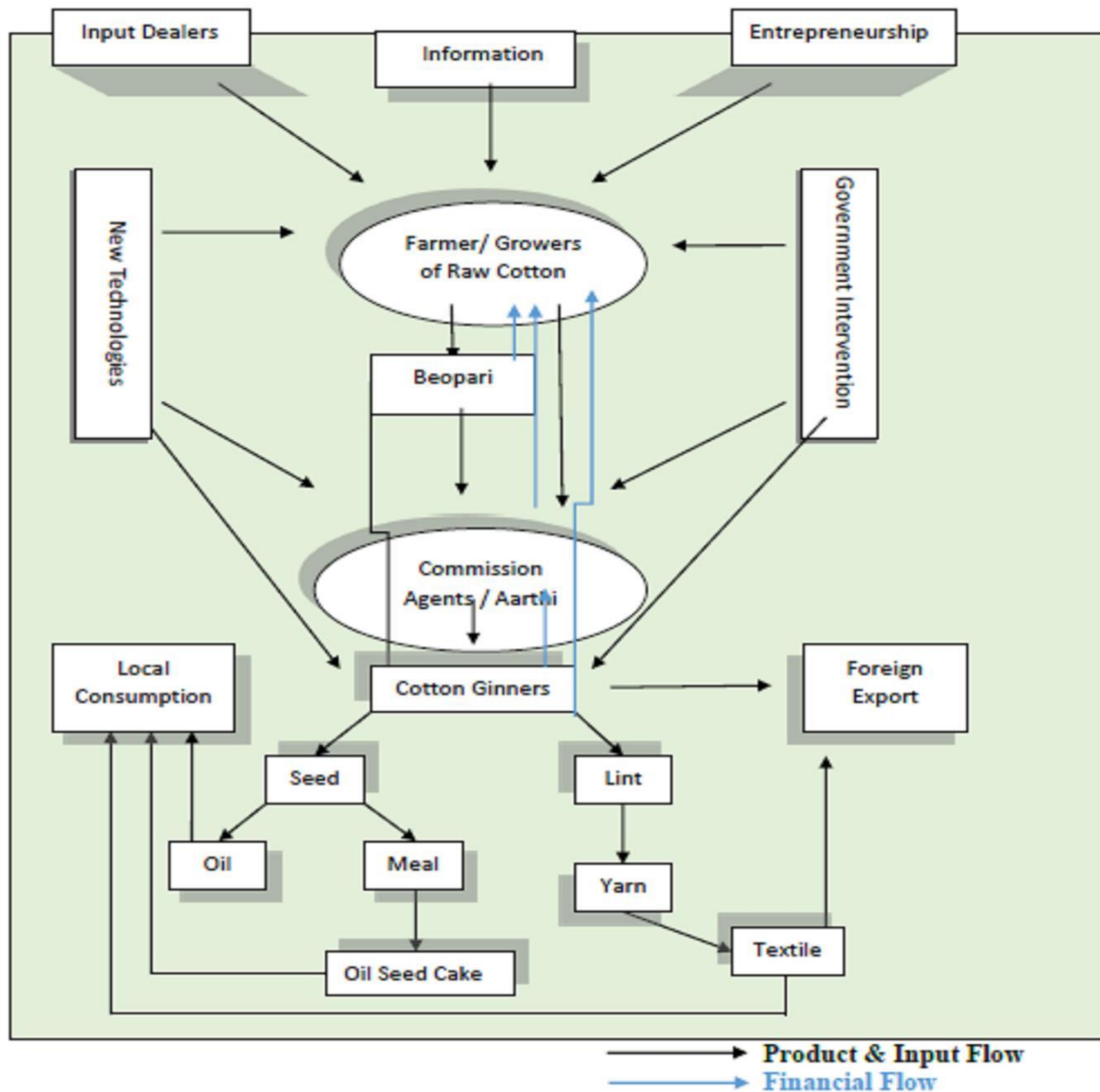
### **3. Results and Discussion**

#### **3.1. Cotton Value Chain Map**

Cotton value chain (CVC) is very long. Raw cotton is converted into cotton lint and seed through ginning. Cotton lint is processed to produce cotton yarn, which is in turn used for the manufacturing of fabrics / cloth, hosiery, apparel, canvas etc. By-products of cotton are cotton seed oil, cottonseed meal (as feed for livestock) and cotton sticks (for fuel and organic matter). The financial relationships between Farmer, Aarthi, Beopari and cotton ginners in

cotton value chain are very much interlinked. Main actors in Cotton VC are input suppliers, farmers, private cotton traders, government procurement institutions, processors, exporters.

**Figure 2: Cotton Value Chain Map**



### 3.2. Financial Demand of farmers

About 89 percent of small, medium and large farmers shown their demand for bank loans and the average loan amount is Rs.0.57, 0.54 and 1.52 million respectively. Agri. land, and gold are the preferred assets used as a collateral to avail bank loans by farmers.

### ***3.3: Estimated Market Opportunities for Banks for Farmers Financing***

Table 1 revealed that potential portfolio opportunity of Rs. 20826 million is available for banks to finance all segments of farmers. This quantification of specific market opportunities enables banks to begin to recognize the potential market for agri. finance.

**Table 1: Market Opportunities for Banks for Farmers Financing (Million Rs.)**

<b>Variables</b>	<b>Small (1-12 Acres)</b>	<b>Medium (12-25 Acres)</b>	<b>Large&gt;25 acres</b>	<b>Total</b>
Avg. Number of Acreage under Cotton Crop (acres) <sup>2</sup>	600000	112500	37500	750000
Avg. Number of Cotton Acreage provided Credit <sup>3</sup> (a)	534000	100125	33375	667500
Avg. Loan Amount (Rs/Acre) <sup>4</sup> (b)	31200	31200	31200	-
Total Portfolio Opportunity (Million Rs.) (c=a*b)	16661	3124	1041	20826

### ***3.4: Estimated Market Opportunities for Fertilizer Dealers Finance***

The fertilizer use by farmers was mostly on credit and the dealer charge about 500-800 rupees extra on DAP bag and about 400-500 rupees extra on UREA bag. And the farmers must return seasonally on crop harvest. There are 250 operational fertilizer dealers in the district. Our field survey indicates that there is 50 percent fertilizer dealers i.e., 125 showed their interest in bank finance. These dealers are then segmented into small, medium and large categories according to their working capital. After that average loan demand for each segment is estimated. Overall analysis reveals that potential portfolio opportunity of (Rs. 225

<sup>2</sup>On an average there are 0.75 million acres under cotton crop in district Bahawalpur. Further, Small, Medium and Large Farmers are segmented at the ratio of 80, 15 and 5 percent respectively

<sup>3</sup>Our estimates show that about 89 percent of small, medium and large farmers have shown their demand for banking finance so accordingly average number of cotton acreage needed for finance are calculated.

<sup>4</sup>Average credit limit for cotton crop is Rs.39000/acre. The assumption is made that 20 percent expenditure farmers meets through its own resources and remaining 80 percent (Rs.31200) through credit.

million) is available for banks to finance all the three segments of fertilizer dealers (Table 2).

**Table 2: Market Opportunities for Banks for Fertilizer Dealers Finance**

Variables	Small (0-1.5 Million Rs.)	Medium (1.6-3 Million Rs.)	Large> 3 Million Rs.	Total
Number of Fertilizer Dealers <sup>5</sup> (a)	63	50	13	125
Avg. Loan Amount <sup>6</sup> (Million Rs.) (b)	1	2	5	-
Total Portfolio Opportunity (Million Rs.) (a*b)	63	100	63	225

### ***3.5. Estimated Market Opportunities for Banks for Farmers Financing through Fertilizer Dealers***

Table 3 reveals that potential portfolio opportunity of Rs. 5464 million is available for banks to finance all segments of farmers through fertilizer dealers. This quantification of specific market opportunities enables banks to begin to recognize the potential market for agrifinance.

**Table 3: Market Opportunities for Banks for Farmers Financing**

Variables	Small (1-12 Acres)	Medium (12-25 Acres)	Large>25 acres	Total
Avg. Number of Farmers Fertilizer Dealer Deals <sup>7</sup> (a)	220	41	14	275
Total Number of Farmers taking fertilizer on credit from dealers <sup>8</sup> b=(a*175)	38500	7219	2406	48125
Avg. Number of Cotton Acreage provided Credit <sup>9</sup> c=(a*b*6,12,25)	231000	86625	60156	288750

<sup>5</sup> The percentage categorization of dealers into small, medium and large is 50, 40 and 10 percent respectively.

<sup>6</sup> Average loan amount is calculated by taking into account future loan demand.

<sup>7</sup> on an average a fertilizer dealer deals with 275 farmers to provide seed on credit (80, 15 and 5 percent respectively Small, Medium and Large Farmers);

<sup>8</sup> There are 250 operational fertilizer dealers in the district and out of these 70 percent (i.e., 175) provide fertilizers on credit to farmers;

<sup>9</sup> On an average credit is provided on 6, 12, & 25 acres for small, medium and large farmers;



Avg. Loan Amount <sup>10</sup> (Rs/Acre) (d)	14463	14463	14463	-
Total Portfolio Opportunity (Million Rs.) e=c*d	3341	1253	870	5464

### ***3.6. Estimated Market Opportunities for Pesticide Dealers Finance***

Pesticide market in the district is very competitive constituting national and multinational companies. It was also seen that some area specific pesticide companies are also working in the district Bahawalpur. These companies have linkages with pesticide dealers who were placed in the grain market specially designed for agriculture produce. There are about 1100 operational pesticide dealers in the district. Our field survey indicates that there are 50 percent pesticide dealers i.e., 550 showed their interest in bank finance. These dealers are then segmented into small, medium and large categories per their working capital. After that average loan demand for each segment is estimated. Overall analysis revealed that potential portfolio opportunity of (Rs. 1155 million) is available for banks to finance all the three segments of pesticide dealers (Table 4).

**Table 4: Market Opportunities for Banks for Pesticide Dealers Finance**

Variables	Small (0-1 Mil. Rs.)	Medium (1.1- 2 Mil. Rs.)	Large > 2 Mil. Rs.	Total
No. of Pesticide Dealers (a)	385	110	55	550
Ave Loan Amount (b)	2	2	3	-
Total Portfolio Opportunity (a*b)	770	220	165	1155

### ***3.7. Estimated Market Opportunities for Banks for Farmers Financing through Pesticide Dealers***

Table 5 revealed that potential portfolio opportunity of Rs. 4382 million is available for banks to finance all segments of farmers through pesticide dealers. This quantification of specific market opportunities enables banks to begin to recognize the potential market for

<sup>10</sup> Average loan amount is Rs.12223/acre. This means 2.25 bags of UREA @ Rs. 1850/bag; 2 bags of DAP@ Rs. 3750/bag; and 1bag of Potash @ Rs. 2800/bag

agri. finance. The gap between the potential loan portfolio and the actual amount of loan provided by the banks is filled by the commission agents same as in the fertilizer case.

**Table 5: Market Opportunities for Banks for Farmers Financing**

Variables	Small (1-12 Acres)	Medium (12-25 Acres)	Large>25 acres	Total
Avg. Number of Farmers Pesticide Dealer Deals <sup>11(a)</sup>	100	19	6	125
Total Number of Farmers taking pesticide on credit from dealers <sup>12</sup> $b=(a*770)$	77000	14438	4813	96250
Avg. Number of Cotton Acreage provided Credit <sup>13</sup> $c=(a*b*6,12,25)$	462000	173250	120313	577500
Avg. Loan Amount <sup>14</sup> (Rs/Acre) (d)	5800	5800	5800	-
Total Portfolio Opportunity (Million Rs.) $e=c*d$	2680	1005	698	4382

### ***3.8. Estimated Market Opportunities for Banks for Farmers Financing through Ginners***

Results in Table 6 revealed that potential portfolio opportunity of Rs. 256 million is available for banks to finance all segments of farmers through ginners. This quantification of specific market opportunities enables banks to begin to recognize the potential market for agri. finance.

**Table 6: Market Opportunities for Banks for Farmers Financing through Ginners**

Variables	Small (1-12 Acres)	Medium (12-25 Acres)	Large>25 acres	Total
Number of Farmers <sup>15(a)</sup>	28	5	2	35

<sup>11</sup> on an average a pesticide dealer deals with 125 farmers to provide seed on credit (80, 15 and 5 percent respectively Small, Medium and Large Farmers);

<sup>12</sup> There are 1100 operational pesticide dealers in the district and out of these 70 percent (i.e., 770) provide pesticide on credit to farmers;

<sup>13</sup> On an average credit is provided on 6, 12, & 25 acres for small, medium and large farmers;

<sup>14</sup> Average loan amount is Rs.5800/acre. This means 6 Pesticide Sprays @ Rs.800/spray; 1 Weedicide Spray @ Rs.1000/spray.

<sup>15</sup>On an average ginner deals with 35 farmers to provide input on credit (80, 15 and 5 percent respectively Small, Medium and Large Farmers);

Total Number of Farmers Ginnners Deals <sup>16</sup> $b=(a*50)$	1400	250	100	1750
Avg. Number of Cotton Acreage provided Credit <sup>17</sup> $c=(a*b*Ave. farm size)$	8400	3000	2500	13900
Avg. Loan Amount <sup>18</sup> (Rs/Acre) (d)	18450	18450	18450	-
Total Portfolio Opportunity (Million Rs.) $e=c*d$	155	55	46	256

### ***3.9. Willingness to work as Banking Agent***

About 93 percent ginnners shown their willingness to work as banking agent for onward lending to farmers; 57 percent shown that they will work only in the capacity of referral of farmers to banks while 43 percent shown that they will do referral and initial documentation as well. Average interest rate ginnners expect from banks for these services varies from 4-5 percent. Further, 93 percent ginnners revealed that they would like to enter binding crop purchase relationships with farmers financed through banks.

About 40 percent ginnners were of the view that main attraction for them to enter in agent banking model is that it will expand their business; 27 percent were of the view that this will help to increase their income; 20 percent were of the view that it will increase their prestige in the area; and 13 percent were of the view that they want to support farmers through agent banking model.

### ***3.10. Estimated Market Opportunities for Aarthi's Finance***

As there are about 400 operational Aarthi's in the district. Our field survey indicates that 40 percent of these Aarthi's showed their interest for bank finance. These Aarthi's are then segmented into small, medium and large categories according to their working capital. After

<sup>16</sup>There are 100 operational ginnners in the district and out of these 50 percent (i.e., 50) provides input on credit to farmers

<sup>17</sup>On an average credit is provided on 6, 12, & 25 acres for small, medium and large farmers.

<sup>18</sup> Average loan amount is Rs.18450/acre. This includes 2 bags each Urea, DAP; 1 bag SOP; 1 weedicide and 6 pesticide sprays respectively.

that average loan demand for each segment is estimated. Overall analysis reveals that potential portfolio opportunity of (Rs. 992 million) is available for banks to finance all the three segments of Aarthi's in the district (Table 7).

**Table 7: Market Opportunities for Banks for Aarthi's Finance**

Variables	Small (0-5 Million Rs.)	Medium (5.1-7 Million Rs.)	Large > 7.1 Million Rs.	Total
Number of Aarthi's shown demand for bank finance <sup>19</sup> (a)	32	96	32	160
Avg. Loan Amount <sup>20</sup> (Million Rs.) (b)	3	6	10	19
Total Portfolio Opportunity (Million Rs.) (a*b)	96	576	320	992

### **3.11. Estimated Market Opportunities for Banks for Farmers Financing through Aarthi's**

Table 8 reveals that potential portfolio opportunity of Rs. 8552 million is available for banks to finance all segments of farmers through Aarthi's. This quantification of specific market opportunities enables banks to begin to recognize the potential market for agrifinance.

**Table 8: Market Opportunities for Banks for Farmers Financing**

Variables	Small (1-12 Acres)	Medium (12-25 Acres)	Large > 25 acres	Total
Avg. Number of Farmers Aarthi deals <sup>21</sup> (a)	200	38	13	250
Total Number of Farmers taking advance from Aarthi's <sup>22</sup> b=(a*50)	56000	7500	1500	65000

<sup>19</sup> The percentage categorization of Aarthi's into small, medium and large is 20, 60 and 20 percent respectively.

<sup>20</sup> Average loan amount is calculated by taking into account current loan amount and future loan demand.

<sup>21</sup> on an average an Aarthi deals with 250 farmers to provide input on credit (80, 15 and 5 percent respectively Small, Medium and Large Farmers);

<sup>22</sup> There are 400 operational Aarthi's in the district and nearly all provides input on credit to farmers. Further. We assume that 70, 50 and 30 percent of small, medium and large farmers get credit from Aarthi;

Avg. Number of Cotton Acreage provided Credit <sup>23</sup> $c=(a*b*6,12,25)$	336000	90000	37500	463500
Avg. Loan Amount <sup>24</sup> (Rs/Acre) (d)	18450	18450	18450	-
Total Portfolio Opportunity (Million Rs.) $e=c*d$	6199	1661	692	8552

#### 4. Conclusions

Based on above results, it was seen that all cotton value chain is governed by the commission agents. He is playing a very critical role. One cannot neglect or exclude his role either it seems costly for farmers. So, it is recommended that there is potential market for agri. finance in the cotton value chain and banks should come forward with specific financial products per the needs and requirement of all value chain actors. Further, ginners have shown their willing to work as banking agent for onward lending to farmers. So it is recommended that banks should come forward to develop a hybrid credit delivery model based on rural banks franchise by introducing innovative partnership with local processors i.e., cotton ginners.

<sup>23</sup> On an average credit is provided on 6, 12, & 25 acres for small, medium and large farmers;

<sup>24</sup> Average loan amount is Rs.18450/acre. This includes 2 bags each Urea, DAP; 1 bag SOP; 1 weedicide and 6 pesticide sprays respectively.

## References

- Azeem, M.M., Muger, A.W. and Schilizzi, S., 2016. Poverty and vulnerability in the Punjab, Pakistan: A multilevel analysis. *Journal of Asian Economics*, 44, pp.57-72.
- Gallai, N., Salles, J.M., Settele, J. and Vaissière, B.E., 2009. Economic valuation of the vulnerability of world agriculture confronted with pollinator decline. *Ecological economics*, 68(3), pp.810-821.
- Haq, A., A. Aslam, A.A. Chaudhry, A. Naseer, K. Muhammad, K. Mushtaq, and M.S. Farooqi, 2013. Who is the "arhi": Understanding the commission agent's role in the agriculture supply chain. International Growth Centre (IGC) Working Paper.
- Henson, S. and Cranfield, J., 2009. Building the political case for agroindustries and agribusiness in developing countries. *Agro-industries for development*, pg, pp.10-46.
- IRUNGU, J.W., 2013. Relationship Between Agricultural Credit Financing and Financial Performance: A Case Of Small Scale Farmers In Kiria Division In Muranga County.
- Kariuki, c., 2016. Financing agricultural value chain in kenya: challenges and opportunities in the dairy subsector.
- Rajan, R.G. and Zingales, L., 2003. The great reversals: the politics of financial development in the twentieth century. *Journal of financial economics*, 69(1), pp.5-50.
- State Bank of Pakistan, Guidelines for Value Chain Contract Farmer Financing, Agriculture Credit and Microfinance Department, State Bank of Pakistan.
- World Bank, 2008. World Development Report 2008: Agriculture for Development, The World Bank, Washington D.C.