The Lahore Journal of Economics
26 :1 (Summer 2021): pp. 123–144

Analysis of Pomegranate Value Chain in Kandahar Province of Afghanistan: Issues and Prospects

Muhammad Hasham Daqiq[*]

Abstract

Pomegranates are one of the most important fruits in the Kandahar province of Afghanistan, which is famous for its pomegranates around the world. Pomegranates play a vital role in the socio-economic life of those who grow them. This study empirically analyzed the value chain of pomegranate production in Kandahar using primary and secondary data. Primary data was collected from 200 pomegranate growers in the Dand, Panjwai, and Daman districts of Kandahar province. These growers were selected using a random sampling method and the data was collected using a structured, pre-tested questionnaire. The secondary data was collected from traders, local collectors, and exporters of pomegranates involving 30 pomegranate selling companies. The value chain analysis shows that from the main four chains of pomegranate production (farmer, collector, trader, and exporter), the main actors are the exporters who process pomegranate and add the greatest value by investing in marketing, shipment, and warehousing and receive highest profit margin among the stakeholders. Exporters of pomegranates to Europe earn an average of 66 Afghani per kg. The next greatest beneficiaries are the growers or farmers who earn an average of 23 AFN on each kg. Local collectors who buy pomegranates from farmers earn the least, at an average of 13 AFN per kg over the costs of processing and transportation.

Keywords: Production, labor, cost, profit margin, farmers, Afghanistan.

JEL Classifications: D4, D46.

1. Introduction

Pomegranate production is an important contributor to the Afghan economy. Pomegranates are considered a major fruit crop and a main source of livelihood for thousands of Afghans across many provinces, e.g. Helmand, Ghazni, Farha, Paktia, Kapisa, Wardak, and

[*] PhD Candidate, Capital University of Economics and Business, China. Lecturer in Economics, Kandahar University, Afghanistan. daqiq.hasham@gmail.com

Balkh. The most popular pomegranates are produced in the desert region of Kandahar. Afghanistan is known as the country of the pomegranate fruit, not only because of its production methods, but also because of the high quality of the landraces grown there (Dawrani, 2010).

Since 2009, the government and NGOs have increased their focus on the development of the pomegranate industry in Afghanistan. In 2009, several hundred thousand pomegranate trees were planted, and the nation exported nearly 50,000 metric tons of the fruit to different countries such as Pakistan and India. In the same year, a nearly six million pound juice factory was constructed in Kabul to make the more commercially viable juice concentrate from the fruit (Sadiq, 2010). Furthermore, the Afghan government promoted fruit exports. The US Agency for International Development also provided assistance, which launching the $6.6 million Kandahar Orchard Project to offer farmers credit for planting new pomegranate trees, particularly on former poppy land (Dawrani, 2010).

The year 2015 was a successful one for Kandahar pomegranates, and according to the report of the Kandahar Chamber of Commerce (KCC, 2015), 7,681 metric tons of pomegranates were exported from Kandahar to different countries, including Pakistan, Tajikistan, India, and even Europe (KCC, 2015).

Data published by the Afghanistan Central Statistic Organization (CSO) in 2017 shows that a total of 99,871 metric tons of pomegranates were produced in Afghanistan on 9,721 hectares of land. Of this, Kandahar produced 72,100 metric tons of pomegranates on 4,825 hectares of land (CSO, 2017). But according to Pajhwok (2018), Kandahar only exported 18,000 metric tons worth USD 4 million (out of 150,000 metric tons produced).

In the last few years there have been some major changes to Kandahar's farming system, including a shift towards multiple cropping and the introduction of new profitable crops. These changes were precipitated by the knowledge brought by Afghans returning from Pakistan and the recent input and support from different international organizations (https://afghanag.ucdavis.edu, 2019).

Pomegranate production in Afghanistan has proven a relative success, and the industry has great potential for increased production. However, there is little investment in the sector. Little is known about the

factors which could be effective at increasing production or which chain of pomegranate production adds more value, in order to increase investment on that chain. This study was designed to help Afghan farmers, investors, the government, and other stakeholders to better understand the production process and which factors can influence pomegranate production.

Specifically, the study seeks to answer the following important questions:

- What are the supply and value chains in the pomegranate sector of Afghanistan?
- What is the natural value chain of the Afghan pomegranate and how it could be improved?
- Which part of the value chain has greatest profitability?
- How can trade and export obstacles be overcome?

2. Literature review

This section provides review of the past research related to the supply chain (profitability, investment, and costs) of various exported crops.

Khunt et al., (2003) studied the economics of production, profitability, and marketing cost of pomegranates by analyzing the consumption and disposal pattern of pomegranate in the Bahavnagar district of Saurashtra region of Gujarat. The result of the study showed that marketable surplus was 98.38 percent. Home consumption by relatives and use for religious purposes was found to be insignificant and the deficit due to damage was only 0.83 per cent. The authors also found that majority of the farmers had disposed 59.01 percent of their production in the local market (Khunt et al., 2003).

Nagesh (2006) studied the entrepreneurial behavior of pomegranate growers in Bagalkot district of Karnataka. The main production problems which has been pointed out by the study were, lack of technical know-how, scarcity of labor, pest and diseases, and lack of adequate credit facilities. The marketing problems identified by interviewed farmers included involvement of intermediaries, high costs of packaging material, and high transportation charges, (Nagesh, 2006).

Koujalgi and Kunnal (1992) calculated the financial feasibility of investment in pomegranate orchards in Bijapur district of Karnataka. The study calculated the net present value for the entire life period of the project to be Rs. 8,283.81. The calculation related to the discounted benefit cost ratio was 1.53. The payback period for the crop was 6.56 years and internal rate of return estimated to be 15.55 percent (Koujalgi and Kunnal, 1992).

Khunt et al. (2003) studied the economics of production and marketing of pomegranates like the Sangli district. The study found that farmers faced a number of problems related to inputs and marketing, including specifically the unavailability of technical training, costly insecticides/pesticides and growth regulators, non-availability of skilled labor at proper times, high wage rates, costly packing material, high commission charges, and lack of efficient market information systems, (Khunt et al., 2003).

Koujalgi et al. (2014) studied the problems faced by farmers marketing pomegranates in Karnataka, India. These were: lack of information about product prices, high transportation costs and other issues related to exporting, lack of maintenance and storage facilities, lack of centers for processing, fruit losses/damage during transportation, high fees of commission, and the lack of guarantee policies for marketing (Koujalgi et al., 2014).

Khan et al. (2008), studying the production of mangos in Pakistan, found that production increased as a result of farm input management practices. Furthermore, the study recommended that the best potential and profitable market for the Pakistan mango is the Middle East (Khan et al., 2008).

More (1999) studied the production of bananas in the Nanded district of Maharashtra, India. Due to the suitability of the climate and awareness among the farmers of better production methods, banana production increased 21 percent. The main reason behind the growth was improved cultural practices and higher use of manures and fertilizers (More, 1999).

3. Data Design and Collection

Primary data was collected from pomegranate growers in three major districts: Daman, Dand, and Arghandab, which are the main producers in Kandahar. Furthermore, for the value chain analysis, the

study required data from pomegranate traders. In some cases, secondary data related to the end consumers and exporters were needed.

The sample consisted of 200 growers of pomegranate and 30 traders who are involved in the processing of the product. The data was collected with the help of a pre-tested structured questionnaire with questions related to all activities included in the value chain: the size of landholdings, cropping patterns, costs of inputs, labor, transportation, and processing, selling price, packaging sorting, and irrigation. In order to reach to the final interview targets, i.e. growers and traders, at the first stage a list of growers in the above mentioned three districts was prepared with help from local agriculture authorities.

The list of pomegranate traders was collected from the Kandahar Chamber of Commerce, and from among them 30 were randomly selected and contacted for interviews. We also interviewed some international dealers via Skype. The steps which enabled us to reach to our target audience are described below.

- Daman, Dand, and Arghandab districts were selected considering their high level of pomegranate production.
- Daman has a total population of 35,402, Dand 45,842, and Arghandab 63,243 for a combined population of 144,487.
- Considering the share of population in each district, the percentage of the sample to be collected from each district was determined as Daman 24.5%, Dand 31.7%, and Arghandab 43.7%.
- The 200 questionnaires were distributed according to these proportions, giving 88 samples for Arghandab, 63 for Dand and 49 for Daman.
- A list of farmers was prepared based on the areas with pomegranate gardens.
- Among the listed farmers, random sampling was used to choose farmers for interview.

4. Data Analysis Procedere

Given the objectives of the study, we applied the methods of Value Chain Analysis to analyze the stages of pomegranate production from grower to consumer, to see which stages of the chain create more

value for the produced pomegranate and to bring them to the attention of strategic planners and future investment.

Porter's Value Chain and Five Forces Analysis will be undertaken (Porter, 2010). The stakeholder analysis is evaluated to identify the relevant actors involved the pomegranate business in Afghanistan. The analysis covers the purchases of raw material, growing (or producing), manufacturing (or processing), sorting and grading, warehousing, transportation, customer service, demand planning, supply planning, and management of the supply chain.

An industry is attractive when it is profitable and unattractive when it is not profitable. The five forces model is a powerful tool for identifying where power is placed in a business or industry. This is useful because recognizes both the strengths and weaknesses of the current or planned competitive position that the concerned business or industry is considering moving into. Each stage of the map is analyzed to better understand where the power lies and where the opportunities for improvement and investment exist.

Porter's Value Chain explains the five forces which are determinants of the attractiveness and competitiveness of the industry (Porter, 1979). In the practical analysis, the forces which could be useful in the specific case of the pomegranate industry will be used here:

i. **Bargaining power of supplier:**
   This is the relationship of suppliers with respect to prices, and asks whether the supplier can drive prices by withholding supply. In the case of pomegranates, the specificity or uniqueness of the product counts heavily. When the number of suppliers are few, there will be less competition and the supplier will be more powerful.

ii. **Bargaining power of buyers:**
   The power of buyer with regard to prices depends on the number of buyers in the market, the cost of changing the buyer, and the terms under which terms they can buy. In the case of pomegranates, the buyers could be local, national, or international, in which case each would have different levels of power to bring down prices.

iii. **Inter-competition:**
   This force analyzes the number of competitors in the business or industry. In the case of pomegranates, this force is likely weak as

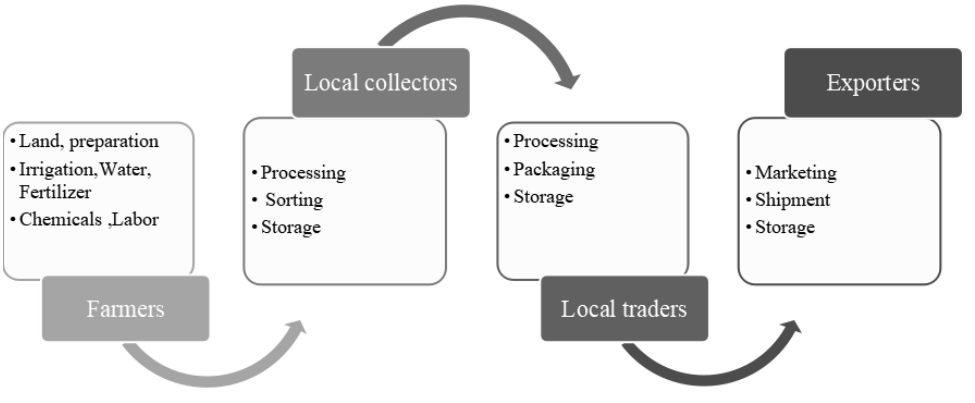
there are large number of producers and the competition is high. However, the quality of the product, the attractiveness of the product, and the uniqueness of the product differentiate the product from the competitors, which might give rise to market power.

iv. **Danger of substitution:**
Here, the existence of substitutes matters. If the customer is able to substitute the product with another, then this force would be weakened. Existence of substitutes is more of a concern in the case of industrial products. However, in the case of pomegranates, this force is less of a concern as there is no direct substitute.

v. **Danger of new entry:**
This force refers to barriers to new entry in the market. When it is difficult for new producers to enter to the industry, the position of producers is stronger. In the case of pomegranate production, barriers to entry exist and new producers need a number of years to grow develop pomegranate trees.

Keeping in mind the above five forces, we use Figure 1 to develop the analysis of the pomegranate value chain, in which each step will be analyzed separately. Pomegranates (and other agricultural products) have a different value chain as compared to industrial products. All stockholders who are involved, from production up to end users will be considered in the analysis.

Figure 1: Pomegranate value chain



5. Results

As mentioned earlier, the study uses primary data collected from three districts of Kandahar province. Before presenting the value chain analysis, we describe some descriptive statistics of the sample in Table 1.

Table 1: Household Heads' Education

Years of Education	Frequency	Percentage	Cumulative Percentage
0	109	54.5	54.5
2	1	0.5	55.0
3	1	0.5	55.5
4	2	1.0	56.5
5	2	1.0	57.5
6	3	1.5	59.0
7	7	3.5	62.5
8	6	3.0	65.5
9	16	8.0	73.5
10	15	7.5	81.0
11	3	1.5	82.5
12	25	12.5	95.0
14	4	2.0	97.0
15	2	1.0	98.0
16	4	2.0	100.0
Total	**200**	**100.0**	

Source: Author's calculations.

From Table 1, 109 of the household heads were illiterate, and only 35 individuals had high school level of education or above. As most of the population lives in rural areas, there is less access to school resulting in a higher illiteracy rate.

Table 2: Land Ownership Status

	Frequency	Percentage	Cumulative Percentage
Not own land	4	2.0	2.0
Own land	196	98.0	100.0
Total	200	100.0	

Source: Author's calculations.

Table 2 shows the ownership status of the pomegranate fields The results show that out of 200 gardens only 4 were owned by someone

other than the grower, who was paying rent. However, the other 196 gardens were owned by the growers.

Table 3: Number of Laborers

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	1	23	11.5	11.6	11.6
	2	78	39.0	39.4	51.0
	3	51	25.5	25.8	76.8
	4	32	16.0	16.2	92.9
	5	11	5.5	5.6	98.5
	6	3	1.5	1.5	100.0
	Total	198	99.0	100.0	
Missing	System	2	1.0		
Total		**200**	**100.0**		

Source: Author's calculations.

Table 3 shows the number of workers working daily in the pomegranate gardens. The most common number of laborers working in a garden is three to four. Fifty-one pomegranate gardens had three people working daily, and 32 gardens had four laborers. Only 23 of the 200 gardens had just one laborer. Importantly, the number of laborers was partially connected to the size of the garden.

5.1. Value Chain Analysis

The study of the pomegranate value chain is designed to interpret the entire chain from producer to consumer. Our study focused on farming activity and looked at the prices and costs of other chains to identify the strengths and weaknesses in the chain for potential improvement. The framework of the study is illustrated in Figure 1.

i. Farmers

Kandahar is characterized agriculturally by pomegranate farming and over the last decade, pomegranate cultivation has spread into several districts of Kandahar.

There are three kinds of pomegranate growers in Kandahar province, the first category being small growers who have 1 – 100 pomegranate trees in their garden, the second category is medium

growers who have 1001 – 200 trees, and finally the third category is large growers who have 201 – 1000 trees in their garden.

To analyze the farmers chain, we use the activities illustrated in Figure 2.

Figure 2: Farmer and farming activities

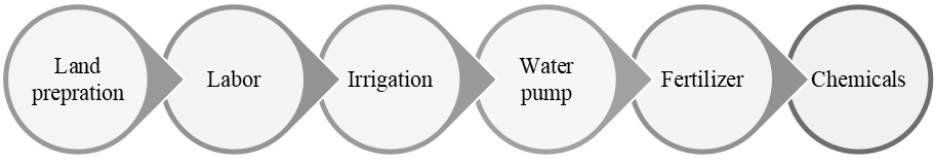


Table 4: Farmers' costs, profits, and sale price of pomegranate, 2020

Stakeholder	Description of the activities	Average Cost per Kg in AFN
Growers / Farmers	Land Preparation	2.9
	Labor	42.9
	Irrigation	1.2
	Water pump	1.1
	Fertilizer	14.7
	Chemicals	2.8
	Average Total Cost per kg	65.6
	Average Total Income per kg	89.04
	Average Net Profit per kg	**23.44**

Source: Author's calculations.

ii. Local Collectors

The local collector buys pomegranate from local growers and, after some basic processing, sells to local traders in Kabul city. Regardless of whether these collectors are based inside the villages or outside them, they mostly perform the same tasks as described in Figure 3.

Figure 3: Local collectors and processing activities

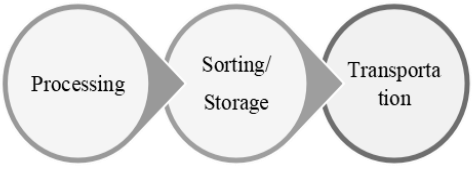


Table 5: Local collectors' costs, profits, and sale price of pomegranate, 2020

Stakeholder	Description of the activities	Average per Kg in AFN
Local Collectors	Collectors cost of buying	89.04
	Processing (unstandardized)	10.4
	Sorting and short-term storage	7.4
	Transportation to Kabul	5.15
	Average Total Cost of Collectors per kg	111.99
	Average Total Income of Collectors per kg	125
	Average Net Profit per kg	**13.01**

Source: Author's calculations.

iii. Local Traders

There are two types of pomegranate traders in Afghanistan. The first category buy pomegranates from local collectors in Kabul city and either use it to produce juice, syrup sugar, or sell it in the local market to end consumers. The second category are individuals or companies who add value to the pomegranate through standard processing, international standard-based packaging, and preparing it for export. In some cases, these traders are exporters as well, however there are companies who are specialized in exporting. At this stage, we will focus more on processing, packaging, storing of the product for juice or syrup production. It is important to mention that the production of pomegranates is greater than local market demand and when export processes are perturbed, an oversupply of pomegranates in the local market greatly reduces the price.

The value chain for traders is given in Figure 4.

Figure 4: Local trader and processing activities

Table 6: Local traders' costs, profits, and sales price of pomegranate, 2020

Stakeholder	Description of the activities	Average per kg in AFN
Local Traders	Traders cost of buying	125
	Processing	1.5
	Packaging (International standard)	3.29
	Storage	1.3
	Average Total Cost of Traders per kg	131.09
	Average Total Income of Traders per kg	149.8
	Average Net Profit of Traders per kg	**18.71**

Source: Author's calculations.

iv. Exporter

The main destinations where exports send Afghan pomegranates are Pakistan, Iran, Tajikistan, India, Dubai, Russia, and Europe. Exports increased after developments in packaging and marketing. The profit margins are higher in this part of value chain. The exporters sell the product to local resellers who sell it onward to end consumers. The value chain of this stage can be found in Figure 5.

Figure 5: Exporting and processing activities

Table 7: Exporters' costs, profits, and sale price of pomegranate, 2020

Stakeholder	Description of the activities	Average per kg in AFN
Exporter	Exporters cost of buying	149.8
	Marketing	5.04
	Shipment in special containers and paperwork	12.21 + 2.26
	Warehousing	8.81
	Average Total Cost of Exporters per kg	178.12
	Average Total Income of Exporters per kg to Europe	244.28
	Average Net Profit of Exporters per kg	**66.16**

Source: Author's calculations.

Analysis of Value Adding Activity Chain of Pomegranate

As discussed, there are many stakeholders across the production chain for pomegranates, and each plays a significant role in adding value to the product. Apart from the cost each actor adds to the product, they also receive a marketing or profit margin when they sell the product onward. Table 8 summarizes these prices and costs. In order to analyze the value chain, we need to see the cost and sales price of each individual link in the chain, which will help us to see how much value is added to the product at each stage.

Table 8: Total average prices and costs of stakeholders (2020)

Stakeholder	Description	Total
Farmers/growers	Production cost	Average per Kg (AFN)
	Total cost	**65.6**
	Selling price	89.04
	Net Income	**23.44**
Local Collector	Buying and selling values	Average per Kg (AFN)
	Total cost	**111.99**
	Selling price	125
	Net Income	**13.02**
Local Trader	Buying and selling values	Average per Kg (AFN)
	Total cost	**131.09**
	Selling price	149.8
	Net Income	**18.71**
Exporter	Buying and selling values	Average per Kg (AFN)
	Total cost	**178.12**
	Selling price	244.28
	Net Income	**66.16**

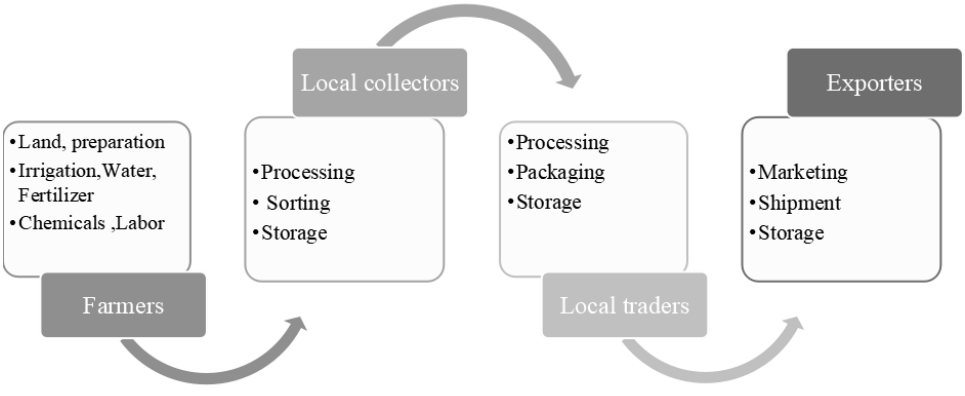
Source: Author's calculations.

Recall that in the pomegranate value chain there are four stakeholder groups: Farmers, local collectors, local traders, and exporters.

The first and main actor is the farmer who is a producer of pomegranates using different means of production. The average cost of all 6 activities during the growing period is 65.6 AFN per kg, the average of selling price is 89.04 AFN per kg and the average net income for one kg of pomegranate is 23.44 AFN. At the same time, the calculation of the average cost of the local collector is 111.99 AFN per kg, the average selling price is 125 AFN per kg and net income is 13.02 AFN per kg. The third stage is when the local trader buys, processes and sells the product to the exporter. The average cost of a local trader is 131.09 AFN per kg,

the average selling price is 149.8 AFN per kg, and net income from each kg pomegranate is about 18.71 AFN. The fourth and final stage involves the exporter. The average cost per kg is 178.12 AFN, the average selling price is 244.28 AFN per kg, and the net income per kg is 66.16 AFN.

According to our data, the highest value is added by the exporter, followed by farmers. While each stakeholder is investing in the product before selling it, the investments of farmers and exporters are giving them greater returns than other parts of the value chain. This implies that the government along with other institutions should give more importance to growers and exporters of pomegranate and more investment has to be done in these as they are adding more net value to the product.



Production cost = 65.6 AFN	**Production cost = 111.99 AFN**	**Production cost = 131 AFN**	**Production cost = 178.12 AFN**
Selling price = 89.04 AFN	**Selling price = 125 AFN**	**Selling price = 149.8 AFN**	**Selling price = 244.28 AFN**
Net value added = 23.44 AFN Per kg	**Net value added = 13.02 AFN Per kg**	**Net value added = 18.71 AFN Per kg**	**Net value added = 66.16 AFN Per kg**

Source: Author's calculations.

6. Conclusion and Recommendations

Pomegranate production is an important contributor to the Afghan economy. Pomegranates are considered a major fruit crop and the main source of livelihood for thousands of Afghans in many provinces, e.g. Helmand, Ghazni, Farha, Paktia, Kapisa, Wardak, and Balkh. As the pomegranate is considered a very important plant for Afghanistan, this study collected primary and secondary data to analyze the value chain of pomegranates and see which chain creates the most value to the product.

The value chain analysis results show that among the main four chains of pomegranate production, the first and main actor are the exporters who process pomegranate and by investing in marketing, shipment, and warehousing they add the greatest value to the product and receive the highest profits among the stakeholders. Exporters of pomegranates to European market earn an average of 66 Afghani from each kg of pomegranate. The stakeholder earning the second most from the production of pomegranates are the growers or farmers. They are the main actors in producing pomegranates and after paying the cost of land preparation, chemicals, fertilizers, etc. they earn an average of 23 Afghani per kg of pomegranate.

The local collectors of pomegranate earn the lowest profit among the stakeholders; even though they make significant efforts to add value to the product, their processing chain is shorter, and they earn less than others involved in chain.

As the result of the study show that exporters and farmers play important roles in adding value to the product. Therefore, it is important that the government and other responsible bodies consider the following points:

- Helping the pomegranate growers have access to modern technology to increase quality in production, processing and sorting according to the needs of the international market. It means the government can use both regulatory tools and technological tools to ensure the standardized quality of pomegranates beginning with the first stages.
- Training should be designed to increase the knowledge of pomegranate growers. It should include training related to the farming, collection, diseases, and seasonal changes of pomegranates. This will boost the quality and processing of pomegranates to help reach international demand.
- Associations and NGOs need to be more involved by providing technical assistance for pomegranate production.
- Farming and collecting tools need to be improved in order to reduce damage to pomegranates.
- Identifying international markets for exporters and signing official trade deals to help in the marketing of pomegranates from Afghanistan.

- Giving subsidiary land to exporters in order to have central freezing systems in large warehouses to reduce the chances of damaging the product.
- Facilitate short- and medium-term loan systems for exporters along with international insurance systems to enable the exporters to increase their capacity.
- Giving tax incentives to exporters so that they can be internationally competitive.

References

Brown, D. (2008). Afghanistan Markets its Pomegranates. The Associated Press. https://www.nbcnews.com/id/wbna27829614

Central Statistics Organization - Islamic Republic of Afghanistan (2017).

Dawrani, N.A. (2010). Afghanistan Investment Support Agency. http://investinafghanistan.af/about-aisa/

Graham, S.A., Hall, J., Sytsma, K., and Shi, S. H. (2005). Phylogenetic analysis of the Lythraceae based on four gene regions and morphology. *International Journal of Plant Sciences*, *166*(6), 995-1017. https://doi.org/10.1086/432631

Halakatti, S.V. (2011). *Study on Entrepreneurial Behavior of Pomegranate Growers in Bagalkot District of Karnataka* (Doctoral dissertation, UAS, Dharwad).

Nagesh, S. (2008). Study on entrepreneurial behaviour of pomegranate growers in Bagalkot district of Karnataka. M.Sc. (Agri.) Thesis, University of Agricultural Science, Dharwad.

Kandahar Chamber of Commerce (2015). http://www.acci.org.af/

Khan, M., Mustafa, K., Shah, M., Khan, N., and Khan, J.Z. (2008). Forecasting Mango Production in Pakistan an Econometric Model Approach. *Sarhad J. Agri*, *24*(2), 363-370.

Khunt, K.A., Gajipara, H.M., Gadhvi, B.K., and Vekariya, S.B. (2003). Economics of production and marketing of pomegranate. *Indian Journal of Agricultural Marketing*, *17*, 100-107.

Koujalgi, C.B., and Kunnal, L.B. (1992). Input use efficiency in pomegranate orchards in Bijapur district, Karnataka. *Indian Journal of Agricultural Economics*, *47*(3), 527-530.

Koujalgi, C.B., Mundinamani, S.M., Kulkarni, B.S., Mahajanshetty, S.B and Sheikh, M.K. (2014). Of marketing chains for domestic and export purpose of pomegranate in Karnataka. *Research Journal of Agricultural Sciences, 4*(2), 241-245.

More, S. (1999). *Economics of Production and Marketing of Banana in Maharashtra State*. (Doctoral dissertation, University of Agricultural Sciences GKVK Bangalore).

Mustafa, S. (2010). Major deal signed to buy Pomegranate Juice from Afghanistan. Afghan News Journal.

Nagesh, (2006). Study on entrepreneurial behavior of pomegranate growers in Bagalkot district of Karnataka, M.Sc. (Agri.) Thesis, Univ. Agric. Sci., Dharwad, India.

Pajhwok Report (2018). https://www.pajhwok.com/en/2018/10/29/kandahar-produces-150000-tons-pomegranates

Patil, S.M. (1995). Yield gaps and constraints in groundnut production in Karnataka An economic Analysis. M.Sc. (Agri) Thesis, University of Agricultural Sciences, Dharwad.

Porter, M. E. (1979). Decision Support Tools: Porter's Value Chain. *Cambridge University, Institute for Manufacturing*.

Porter, M.E. (2010). Strategic Management. Quick MBA, United Kingdom. http://www.quickmba.com/strategy/strategic-planning/

Shilkina, I.A. (1973). On the Xylem Anatomy of the Genus Punica L. *Botanicheskii Zhurnal*, *58*, 1628-1630.

Statistical Year Book, (2019). Afghanistan Central Statistical Organization. https://www.nsia.gov.af:8080/wp-content/uploads/2020/10/Trade-Statistics-Q2-2020.pdf

Attachment 1.

Sample of growers' questionnaire

د سروې پوښتنليک

ښاغلو ګډونوالو
دغه سروې **په افغانستان کې د انارو پر تولید باندې د اثر غورځوونکو عواملو دتحلیل: د کندهار ولایت د یوې عملي بیلګې په توګه** تر عنوان لاندې د یوې علمي تحقیقي مقالې د لیکولو په موخه د معلوماتو د راټولو لپاره ترسره کیږي.
کوم معلومات چې ددغه سروې پوسیلې ترلاسه کیږي په ډیر محرمانه ډول سره یواځې او یواځې د تحقیقي مقالې د لیکولو لپاره استعمالیږي او ستاسو شخصي معلومات ثبت او یا درپیم کس ته نه ورکول کیږي.
په دغه سروې کې ستاسو د ملاتړ او ګډون نه یوه نړۍ مننه!
په درنښت
د تحقیق ټیم

I. دیموګرافیکي معلومات

1. نوم:	2. د کورنۍ د غړو شمیر: نارینه ښځینه
3. عمر: کاله	4. په کرنه کې د مشغولو کورنۍ غړو شمیر:
5. زده کړې : کاله	
6. جنسیت: ☐ نارینه ☐ښځینه	

II. د کرنې په اړه عمومي معلومات

7. آیا تاسو د کرنې ترڅنګ په مالداري کې هم مشغول یاست؟	☐هو ☐نه
8. د انارو ترڅنګ نورکوم کرنیز محصولات کرئ؟	☐غنم ☐حبوبات ☐جوار ☐ترکاري ☐داسې نور
9. په اونۍ کې څو ورځې په کرنه کې مشغول یاست؟	
10. په عمومي ډول د ورځې څو ساعته کرهنه کې بوخت یاست؟	
11. آیا د کر ځمکه مو خپله ده؟	☐هو ☐نه
12. آیا ځینې شخصي کرنیز وسایل لکه ترکتور او یا داسې وسایل لرئ؟	☐هو ☐نه
13. آیا د فصلونو د خړوبولو لپاره د دولتي کانالیزون نه ګټه پورته کوئ؟	☐هو ☐نه
14. آیا تاسو د فصلونو د خړوبولو لپاره شخصي کوهئ هم لرئ؟	☐هو ☐نه
15. آیا د کرنې ترڅنګ کوم بل ډول عاید لرونکی دنده هم لرئ؟	☐هو ☐نه ☐که هو نو کومه دنده:
16. په میاشت کې د ټولې کورنۍ اوسط عاید مو څومره دی.	.....افغانی

17. د عايد د لاسته راوړلو ستري سرچيني کومي دي.	□کرنه □شخصی کاروبار □معاش لرونکي دنده □او داسي نور

III. د انارو د حاصلاتو په اړه معلومات

18. د څو کلونو را هيسي د انارو په کرنه کي بوخت ياست	
19. آيا د انارو د کرلو لپاره کومه مسلکي زده کړه مو ترلاسه کړي ده؟	□هو □نه، که هو نو چيرته: □څومره:
20. تير کال کي مو د انارو د کرلو نه څومره عايد ترلاسه کړی وو.	.....افغانی
21. تير کال کي مو د انارو کرلو ته څومره ځمکه تخصيصه کړي وه.	
22. آيا د انارو د کرلو لپاره مو ځمکه په کرايه او يا اجاره نيولي وه؟	□هو □نه ، که هو نو څومره کرايه مو تاديه کړي وه: ، که نه نو د خپلي ځمکي لپاره متوقعه کرايه څو ټاکئ:
23. په يوه مياشت کي دانارو په کرنه کي څو ساعته بوخت ياست.	

IV. د مصارفو او عوايدو په هکله معلومات

24. د انارو د کرلو لپاره په يوه فصل کی مو څومره کارګران لرل؟	د کارګرانو شمير: ، د کاري ساعتونو شمير: په ورځ کي د کاري ساعتونو شمير:
25. د انارو په يوه جريب باغ کی په يوه فصل کی د کارګرانو معاش ؟.	..... افغانی
26. آيا د کورنۍ کوم غړی موهم د انارو په کرنه کي تاسو سره مرسته کړی وو؟	□هو □نه ، که هو نو څومره ورځي :
27. د انارو د کرلو لپاره مو کوم لګښتونه کړي وو.	□غويان ، څومره: □اوبول، څومره: □ماشين الات، څومره:
28. د انارو د کرلو لپاره د ونو تعداد څومره دی؟	.....
29. د انارو د کرلو لپاره د نيالګيو لګښت په يوه جريب کی څومره وو؟	ستاسو د خپلني نيالګی ارزښت: افغانی د اخيستل شوی نيالګيو ارزښت: افغانی مجموعی ارزښت
30. د انارو د ښه ساتلو په موخه د حشراتو او نورو زراعتی آفتونو د مخنوی لپاره مو څومره لګښت ترسره کړي وو. په يوه جريب باغ کی، يوه فصل کی؟	دزراعتي آفتونو لپاره لګښتونه: افغانی د حشراتو د مخنوي لپاره لګښتونه: افغان
31. د انارو د کرلو لپاره مو سري لپاره مو په يوه فصل کی څومره لګښت کړي وو ؟ يوه جريب لپاره	د خپلني سري لګښت: افغانی د اخيستل شوي سري لګښت: افغانی

32. د انارو د کرلو لپاره مو کیمیاوي موادو لپاره مو په یوه فصل کی ، په یوه جریب کی څومره لګښت کړي وو؟	
33. آیا تاسو د خپلو وسایلو د فرسایش لګښت محاسبه کوئ؟	☐هو ☐نه ، که هو نو د کلني فرسایش لګښت مو څومره دی:
34. آیا د انارو د کرلو لپاره مو د کوم بانک او یا بلي مالي اداری نه کوم ډول قرضه اخیستئ وو؟	☐هو ☐نه ، که هو نو څومره سود مو تادیه کړی وو: افغانی: .....

V. د تولید او مصروف جدول

34. په یو جریب ځمکه کي په یوه فصل کی د انارو د باغداری نه څومره مو په اوسط ډول خالص عاید ترلاسه کړي وو؟	افغانی.....
35. په یو جریب ځمکه کي په یوه فصل د انارو د کرلو لپاره څومره یوریا استعمال کړئ وو؟	افغانی.....
36. په یو جریب ځمکه کي په یوه فصل د انارو د کرلو لپاره څومره DAP استعمال کړئ وو.	افغانی.....
37. په یو جریب ځمکه کي په یوه فصل د انارو د کرلو لپاره څومره حیواني سره استعمال کړئ وو؟	افغانی.....
38. په یوجریب ځمکه کي په یوه فصل د انارو د نیالګیو لګښت څومره وو؟	افغانی.....
39. په یو جریب ځمکه کي په یوه فصل د کارګرانو لګښت څومره وو؟	افغانی.....
40. د یو جریب ځمکه کی په یوه فصل د ځمکی د اماده کولو لګښت څومره وو؟	افغانی.....
41. په یو جریب ځمکه کي په یوه فصل د کیمیاوی موادولګښت څومره وو؟	افغانی.....
42. په یو جریب ځمکه کي په یوه فصل د ماشین الاتو لګښت څومره وو؟	افغانی.....
43. د را ټول شوو انارو د پروسس اوسط لګښت په یوه جریب باندی په یوه فصل څومره دی؟	افغانی.....
44. د ترانسپورت لګښت په یوه فصل د یوجریب باغ لپاره څومره دی؟	افغانی .....
45. په یوه فصل کی تاسو څومره انار په یوه جریب باغ کی تولیدوی؟	د یوه جریب انار اندازه په یو فصل کی ..... من
46. تاسو ته یو من انار په څو تمامیږی ؟	افغانی .....
47. تاسو یو من انار په څو تجارانو باندی خرڅوی؟	افغانی.....

48. د باغداری د اوبو منبع ؟	□ شخصی واترپمپ □ دولتی کانال □طبیعی اوبه
49. کچیری شخصی واترپمپ څخه استفاده کوی، په یوه فصل کی د یوه جریب باغ مصرف څو دی؟	افغانی.....

VI. د کورنی په اړه معلومات

1. د کورنی د مشر جنسیت	□نارینه □ښځینه
2. د کورنی د مشر د تعلیم اندازه	کلونه
3. د کورنی د غړو شمیر	نارینه: ښځینه
4. په کورنی کي مو څومره کسان کارکوي	
5. په کورنی کي مو د نارینو کارکوونکو شمیرڅومره دی.	کسان
6. په کورنی کي مو د ښځینو کارکوونکو شمیرڅومره دی.	کسان
7. د کورنی د ورځي متوسط عاید مو څومره دی.	افغانی
8. د کورنی د میاشتي متوسط عاید مو څومره دی.	افغانی
9. آیا کرنیزي توکي د خرڅلاوو لپاره□ ئ □ او بازار ته لاس رسی لرئ؟	هو نه
10. ښونځی مو د کور نه څومره لري دی.	کیلومتره
11. آیا د کورنی کوم غړی مو شدیده نا□غي □ لري؟	هو نه