



Economic Efficiency of Lapis Lazuli Route on Marketing of Agricultural Commodities in Helmand Province, Afghanistan

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Abstract: The study on the Economic efficiency of the Lajwar Highway (Lapis Lazuli Route) erection project on the Marketing of Agricultural commodities, Helmand Province - Afghanistan was accomplished in the Province of Helmand in 2018. This Province is the largest by area, which covers 58,584 square kilometers (20,000 sq mi) area. An effort has been made in this study, to examine the returns of the current Agricultural production. The specific objectives of the study are to find out the Profitability, comparison, gross returns, and net returns of Agricultural Production of the Province in the Local market and Global Market. Helmand province was selected purposively, because it has a maximum area, under various crop production. The primary data for the research was collected from the Department of Agriculture, irrigation and livestock, Helmand. It is observed that some of the fruits like grape, pomegranate, almond, and fig have highly profitable income in the local market, and among these pomegranate, grape, and almond profit is maximum with net income of Af. 158600, Af. 98580 and Af. 91900 respectively. It is conforming to the findings if these fruits are exported to European countries will obtain high returns. In the Global market grape and pomegranate returns are quite sufficient and highly commercial with the net income of Af. 346900 and Af. 642600 per Jerib (0.2 Hectare) individually. Almond and dried figs economically play an essential role either in the overseas market with a net return of Af. 278203 and Af. 352370 per Jerib (0.2 hectares), which will positively increase the income of producers of the province.

Keywords: Returns, Profitability, Agricultural Commodities, Helmand

1. Introduction

Helmand in olden times, as a Hermand or Hethumand is one of 34 provinces of Afghanistan, located in the Southern part of the country. It is the biggest province that covers 58,584 square kilometers (20,000 sq mi) area. The project of Helmand River Valley delivers irrigation water for almost (150,000) hectares. The Northern part of this province does not have straight contact with the water of the river and depends on groundwater for irrigation and springs naturally, which stream into karizes (ancient water supply system). Tube wells are being dug deeply in the north which caused a decrease in kariz irrigation because of drought, which has led to a decrease in groundwater provisions. Helmand agriculture has a strong production history due to the extensive system of irrigation that was erected by the United States over (40) years ago. Field crops like wheat, maize, barley, and mung beans are cultivated and produced where irrigation supply is possible. The climate situation is advantageous to double, cropping (summer and winter, crops in the same field). Industrial crops, like cotton, peanut, and soybeans are cultivated on a small scale, due to a lack of processing industries. Production, of vegetables, is entirely almost subsistence and some surplus is being sold locally. Nuts and fruit cultivation occur either. Livestock and poultry are raised in the province as well for consumption locally (Ahmad et al., 2017).

According to (RAMP, 2003), corn, sesame, grapes, pomegranate, and other vegetables, including eggplant, okra, cucumber, and onions were produced in Helmand. Among these crops, corn, grapes, and pomegranate were estimated to have relatively high net returns. Net income to corn, a cash crop mostly used for feed, was estimated at Afs 8000 /ha.

High volumes of grapes are being supplied to the Lashkargah market. The excess grapes could be dried into raisins or processed into juice. Pomegranate will be harvested later in the season during a narrow window of less than one month. The glut of pomegranates was sent to distant domestic and export markets, though risking quality deterioration from transport on poor roads.

Winter wheat is the predominant cultivated crop for Helmand. Barley is also a winter grain crop that is produced in a smaller area but is an important crop. Maize (corn) is the largest crop produced in the summer. Wheat, barley, and corn are all grain crops that are critical to food security. They are grain crops that produce maximum levels of storable food per hectare. This is an extremely important fact to realize when considering any shifts in production in the Helmand agricultural system. The certified seed for wheat and barley is critical for good yield potential. Hybrid corn seed is a must for acceptable production. Quality seed and nutrient management are opportunities for improvement in the Helmand agricultural system. Industrial crops are oilseed crops such as cotton, peanuts and soybeans. These are also high-protein commodities that would supplement human nutrition as well as enhance livestock and poultry production. Peanuts and soybeans are legumes that fix their nitrogen making them excellent rotation crops providing some nitrogen for the following winter grain crop. Vegetables are grown almost exclusively for subsistence in compound gardens. Centralized grading and packing facilities do not exist in key production zones which would need to be supported by vegetable producers' associations for commercial production to be viable. Common vegetables grown in Helmand province are chili, carrots, watermelon, onion, cabbage, cauliflower, turnip, tomato, spinach, radish, okra, eggplant, cucumber, leek, coriander, pumpkin, squash, etc. Commercial fruit production is increasing due to the efforts of many donor organizations. However, as the chart below indicates; only a minimal amount of production exists. Orchards are principally in Northern Helmand (almonds, apricots, pomegranates and grapes), but nursery production is viable in the central districts. Recognizing the limitation of high-value fruit production as an alternative to poppy is a critical concept that must be accepted (Ahmad et al., 2017). Considering the above-mentioned facts, the present study was undertaken to find out the Profitability and comparison of Agricultural Production of the Province in the Local market and Global Market and to work out the Gross returns and net returns of various crops production per Jerib (0.2 hectares) in local market and Global market. Therefore, we can determine the objectives of the Study: To find out the profitability and comparison of agricultural production of the province in the local market and global market and To work out the gross returns and net returns of various crops production per Jerib (0.2 hectares) in the local market and global market.

2. Material and Methods

The present study was conducted in Helmand Province in 2018. This province has (13) districts, covering over (1,000) villages and jaggedly 1,442,500 stable people. Lashkargah is the provincial capital. Once Helmand belonged to the region of Kandahar that was made into a separate province, by the Government of Afghanistan in the 20th century. This province has a domestic airport named (Bost Airport) located in Lashkargah City. The river of Helmand runs over the largely desert area of this province which provides irrigation water for the agriculture sector. Kajaki Dam, which is the major Afghanistan reservoir is situated in the district of Kajaki. The region produces tobacco, barley, pomegranate, cotton, sesame, wheat, maize, mung beans (green and black), potato, almond, sunflowers, onions, tomato, cucumber, cauliflower, okra, peanut, apricot, peach, grape, watermelon, and melon (Ahmad & George, 2016). The investigation on the economic efficiency of the Lapis Lazuli Route in marketing agricultural commodities of Helmand province, Afghanistan was purposively taken as the task was given by the President of Afghanistan to all the Provincial Universities to conduct research regarding the related topic and submit the findings to the presidential office for further actions. The research covered all the districts (13 districts) of the province to analyze and study the returns of Agricultural Production of the province in both local and global markets. Two markets for the Agricultural Production of the Province were selected and studied randomly one was locally located in the province and another one was a Global market that mainly covers those overseas countries which come under the Lapis lazuli route. The secondary data on prices of production were gathered from various abroad websites and databases and related primary data were gathered from the Helmand, Department of Agriculture, Irrigation and Livestock (DAIL).

3. Result and Discussion

3.1 Profitability and Comparison of Agricultural Production in Local Market and Global Market, Helmand Province:

Local and Global market gross returns for Agricultural products of Helmand Province are presented in Table and Fig 3.1. The highest returns per metric ton are from almond, dried pig, pomegranate, cumin, and grape production if sold in Abroad Market which is Af. 858305, Af. 556100, Af. 150000, Af. 180000 and Af. 120000 respectively. Among these almonds comes in the first rank, dried fig come in the second rank, and pomegranate, cumin, and grapes come in the third, fourth, and fifth ranks separately based on maximum income. Cotton comes in 6th ranking (Af. 106128). Marketing of mung beans (Black and Green) also play an essential role in terms of high profit in abroad market which are Af. 120600 and Af. 87100 respectively. Only two products wheat and maize have a low price in overseas markets and the deducting profit is simply Af. 100 and Af 300 which is not profitable because if wheat and maize are sold in the

local market, the obtained revenue will be Af. 20900 and 15600 thus the comparison sum of these two cereals will be Af. 100 and Af. 300 respectively if sold in overseas markets through the lapis lazuli route despite all the hard work, and costs like transportation, loading/unloading, grading, packaging, taxes, etc. which will consequent low profits in comparison to fruits (dried and fresh). After subtracting the total returns of the local market from abroad, almonds, dried fig, pomegranate, cumin, and grapes are highly profitable thus considering the maximum earning from Agricultural products of the province in the abroad market, as Turkey is the starting big and highly populated country of Lapis Lazuli route and considering their market demand, they must be exported to Turkey and Europeans countries to get supreme profit which will also assist extremely the economy of the country.

Table 1 : Profitability of Agricultural Production from Local Market and Abroad Market

No.	Crop	Revenue in Local Market (Af/MT)	Revenue in Global Market (Af/MT)	Comparison or Deducting Sum of Local from Global Market (Af)	Rank
1	Grape	35000	120000	85000	5th
2	Pomegranate	40000	150000	110000	3rd
3	Apricot	38000	69010	31010	
4	Peaches (Shaftalow)	45000	67000	22000	
6	Peaches (Alobokhara)	50000	81600	31600	
7	Peaches (Geringech)	30000	54200	24200	
8	Almond	330000	858305	528305	1st
9	Fig (Dried)	200000	556100	356100	2nd
10	Watermelon	21000	33500	12500	
11	Melon	32000	44220	12220	
12	Maize	15600	15900	300	
13	Wheat	20900	21000	100	
14	Cotton	44400	106128	61728	6th
16	Peanut	52200	81941	29741	9th
17	Cumin	75093	180000	104907	4th
18	Sesame	91500	106000	14500	10th
19	Mung bean (Black)	48300	87100	38800	8th
20	Mung bean (Green)	62200	120600	58400	7th

1 Jerib = 0.2 Hectare (Source: Department of Agriculture, Irrigation and Livestock – Helmand Province & Local Market Committee, 2018)

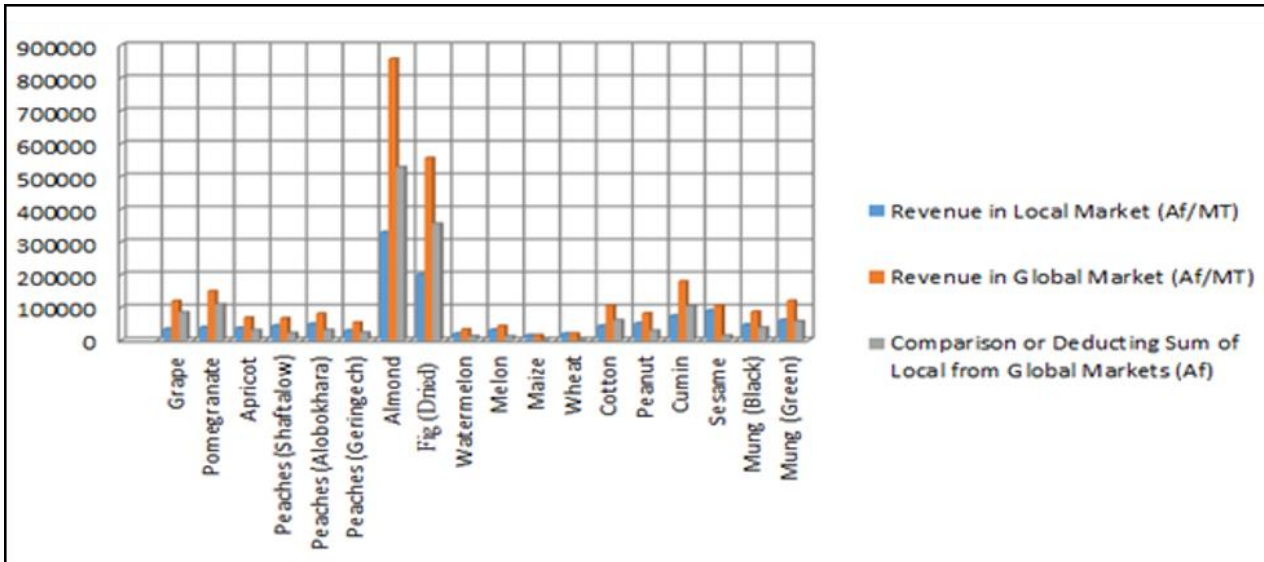


Fig.1: Profitability and comparison from Local market and Global Market

3.2 Gross and Net Returns of Agricultural Products per Jerib (0.2 Hectare) of Helmand Province:

A summary of the costs and return of crops per Jerib is represented by gross return received; net returns obtained after subtracting the total cost of cultivation for both markets (local and abroad) in Table & Fig 3.2. Overall, the estimated gross return of grape, pomegranate, almond, dried fig, cotton, peanut, cumin, and mung bean was obtained as well as attained net return of these products in local and abroad markets. The gross returns of mentioned products varied from Af/J 14490 to Af/J 176000 in the local market. The obtained net return was highest in pomegranate, almond, grape, and dried fig which are Af/J 642600, Af/J 278204, Af/J 346900, and Af/J 352370 respectively in the abroad market which is greatly profitable. Some of the products like pomegranate, grape, almond, dried fig, and cumin have sufficient returns in the local market either. However, the net returns of mung beans (black & green) are not gainful and for the improvement of the marketing considerable and positive changes are required.

Table 2 : Gross and Net Returns of Agricultural Products per Jerib

No.	Crop	Average Yield per Jerib (MT)	Gross Return (Af)		Total Input Cost (Af)	Net Return (Af)	
			Local Market	Abroad Market		Local Market	Global Market
1	Grape	3	105000	360000	13100	91900	346900
2	Pomegranate	4.4	176000	660000	17400	158600	642600
3	Almond	0.34	112200	291823.7	13620	98580	278203.7
4	Fig (Dried)	0.7	140000	389270	36900	103100	352370
5	Cotton	0.8	35520	84902.4	12500	23020	72402.4
6	Peanut	0.8	41760	65552.8	8300	33460	57252.8
7	Cumin	0.5	37546.5	90000	10900	26646.5	79100
8	Mung (Black)	0.3	14490	26130	9200	5290	16930
9	Mung (Green)	0.3	18660	36180	9200	9460	26980

1 Jerib = 0.2 Hectare (Source: Department of Agriculture, Irrigation and Livestock – Helmand Province & Local Market Committee, 2018)

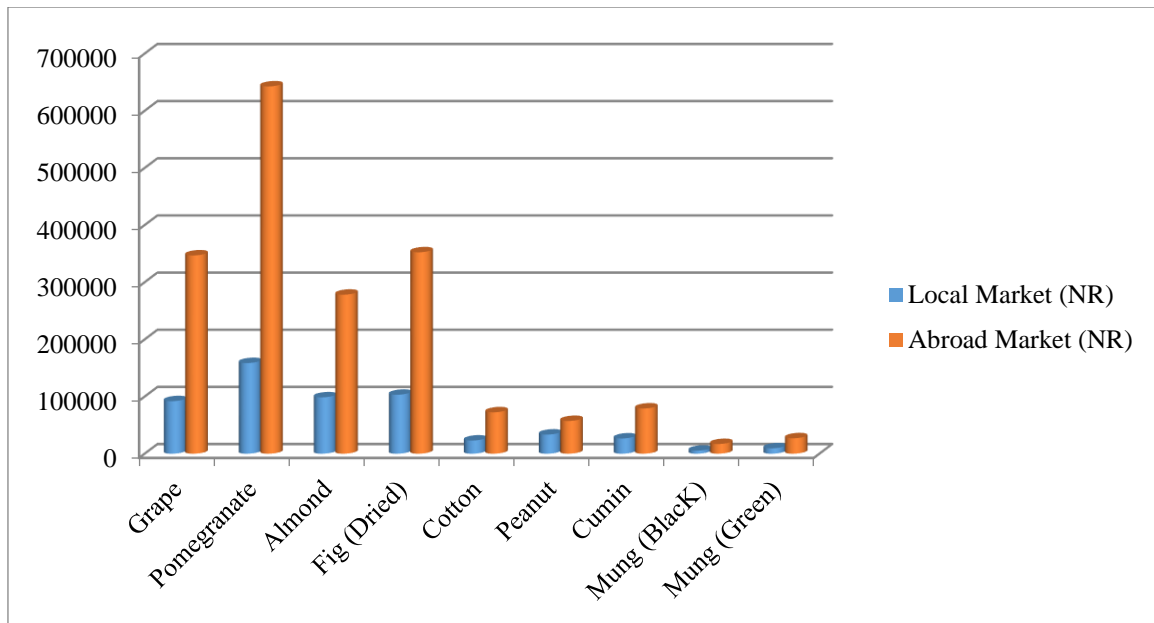


Fig.2: Net Return of Local Market and Abroad Market

4. Conclusion

The highest returns per metric ton are from almond, dried fig, pomegranate, cumin and grape production if sold abroad Market which is Af. 858305, Af. 556100, Af. 150000, Af. 180000 and Af. 120000 respectively. Some of the cereals like wheat and maize have no profits if exported to Turkey and European countries because Turkey is the starting point of Lapis Lazuli route and it is also a highly populated country as well as their market demand but as per the study findings, their market demand for these two kinds of cereal are low. The cost and return analysis of grape, pomegranate, almond, and cumin revealed that the production in the study area was profitable. The cost of cultivation is maximum in dried fig production (Af. 36900) followed by pomegranate (Af. 17400), almond (Af. 13620), grape (Af. 13100), and cumin (Af. 10900) per Jerib respectively. The local market of grape, pomegranate, almond, and fig productions is highly profitable with a net farm income of Af. 91900, Af. 158600, Af. 98580 and Af. 103100 respectively. From the findings, it is recommended that if some of the agricultural products such as grape, pomegranate, almond, dried fig, and cumin are exported to European countries through the Lajwar highway (Lapis Lazuli Route), will be so much more profitable and the net returns of these products will be Af. 346900, Af. 642600, Af. 27820, Af. 352370 and Af. 79100 respectively. It is also recommended the Government of Afghanistan and the Ministry of Agriculture, Irrigation and Livestock strengthen their business relationship effectively greater, especially with countries that come under the Lapis Lazuli Route for the export of those Agricultural commodities which have high demand and consequently the income of the producers will increase either.

References

- Ahmad, A., and George, P.J., (2017). Farming system for Helmand province, Afghanistan. *International Journal of Multidisciplinary Research and Development*, 3(10), 197-201. <https://www.allsubjectjournal.com/download/2685/3-11-18-601.pdf>
- Ahmad, A., Kumar, D., Mujadidi, N., Rafi, B., & Wasifhy, M. K. (2017). Integrated farming system for Helmand Province, Afghanistan. *International Journal of Advanced Education and Research*, 2(5), 62-67. <https://www.alleducationjournal.com/download/392/2-5-30-834.pdf>
- Commodity Prices - Price Charts, Data, and News - IndexMundi*. (n.d.). <https://www.indexmundi.com/commodities/>
- Helmand Province. *Government of Afghanistan and United Nations Development Programme (UNDP)*. Ministry of Rural Rehabilitation and Development. Retrieved 07 December 2022.
- Markets Insider: Stock Market News, Realtime Quotes and Charts*. (n.d.). markets.businessinsider.com. <https://markets.businessinsider.com/>
- Prices in Istanbul of groceries: sweets, fruits and other foodstuffs*. (n.d.). [GlobalPrice.info](http://www.globalprice.info/en/?p=turkey/istambul-turkey-food-prices). <http://www.globalprice.info/en/?p=turkey/istambul-turkey-food-prices>

Soni, R.P., Katoch, M., & Ladolia, R. (2014). Integrated Farming Systems - A Review. *Journal of Agriculture and Veterinary Science*, 7(10), 36-42.

Smith, Michael (2006-10-01). "British troops in secret truce with the Taliban". *The Times*. London. Retrieved 20 January 2023.

Zain ullah Stanakzai (August 30, 2015). "300 casualties inflicted on rebels in Musa Qala: Governor". Pajhwok Afghan News. Retrieved 16 August 2022.