EXPORT AND IMPORT PERFORMANCE OF MAJOR FRUITS AND DRY FRUITS IN INDIA VIS – A – VIS AFGHANISTAN

By
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(2019A09M)

Thesis submitted to the Chaudhary Charan Singh Haryana Agricultural University, Hisar in partial fulfillment of the requirements for the degree of

M.SC. (AGRICULTURE)

IN

AGRICULTURAL ECONOMICS

DEPARTMENT OF AGRICULTURAL ECONOMICS
COLLEGE OF AGRICULTURE
CCS HARYANA AGRICULTURAL UNIVERSITY
HISAR- 125004 (HARYANA)

2022

CERTIFICATE-I

This is to certify that this thesis entitled, **"Export and Import Performance of Major Fruits and Dry Fruits in India vis – a – vis Afghanistan"** submitted for the degree of **Master of Science (Agriculture)** in the subject of **Agricultural Economics** of the **Chaudhary Charan Singh Haryana Agricultural University, Hisar** is a bonafide research work carried out by **Mr. Sediqullah Zahid,** Admn. No. **2019A09M** under my supervision and that no part of the thesis has been submitted for any other degree.

All the assistance and help received during the course of investigation have been fully acknowledged.

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This is to certify that this thesis entitled **Export and Import Performance of Major Fruits and Dry Fruits In India vis – a – vis Afghanistan"** submitted by **Sediqullah Zahid,** Admn. No. **2019A09M to** the **Chaudhary Charan Singh Haryana Agricultural University, Hisar** in partial fulfillment of the requirement for the degree of **Master of Science (Agriculture)** in the subject of **Agricultural Economics** has been approved by the student's advisory committee after an oral examination on the same in collaboration with an external examiner.

MAJOR ADVISOR **EXTERNAL EXAMINER**

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DEAN, POST-GRADUATE STUDIES

Acknowledgements

First and foremost, praise and thanks to the almighty Allah, for his shower of blessings, throughout my research work. Writing thesis is harder than what I had thought and more rewarding and satisfying that I could have imagined. It is a surreal process. I am forever indebted to my respected advisor, Dr. Dalip Kumar Bishnoi, Assistant Scientist, Department of Agricultural Economics, Chaudhary Charan Singh Haryana Agricultural University, Hisar, for your keen insight, thoughtful criticism and ongoing support without which it would have been a tedious task to complete this investigation. It is because of your efforts and encouragement that I have legacy to pass on to my family where one didn't exist before.

Then, I would like to thanks my Co-Major, Dr. Nirmal Kumar, Assistant Scientist, Department of Agricultural Economics, whose valuable guidance helped me patch this study and make it full proof success. His suggestions and instructions have served as major contribution for completion of study.

I owe an everlasting depth of thanks to my advisory committee members, Dr. Nitin Bhardwaj, Assistant Scientist, Department of Statistics (Member from Minor subject)), Dr Baharat Singh, Assistant Scientist, Department of Extension Education (Member from supporting subject) and Dr Anil Kumar (Dean Pgs nominee) for their continuing expert advice and support.

I convey my deep sense of gratitude to Dr. D.P. Malik, Head Department of Agricultural Economics, Dr. V.P. Mehta, Professor, Dr. K.K. Kundu, Associate Professor, Dr. Jitender Kumar Bhatia, Assistant Director, Dr. Sumit, Assistant Scientist Dr. Sanjay Bhyan, Assistant Scientist, Dr Kavita, Assistant Scientist and Dr. Janailin S. Papang, Assistant Professor for taking time to mentor and meet with me and especially, I am very thankful for their passion and support that has left an impact on me that will never wear out. Also, the cooperative attitude of non-teaching staff and all the attendants of Department of Agricultural Economics are worth appreciating.

No choice of words will suffice to adequately register my gratitude to my role models, my source of inspiration and respected father Shri. Abdulghafoor and my mother Smt. Bibi Fatima for their unconditional love and support throughout entire course of study.

I would like to thanks respected seniors, Dr Kabir Abdulaziz, Dr Ali Rezaei, Dr RajKumar, Dr Praveen, Dr Nitin Goyal, and my astounding friends, Said Bhaudin Latoon, Jawid Rahman Rahmani, Gowhar Bashir khan, Ijazulhaq Haqmal, Mohammad Rafi Bawari, Mohammad Nabi, Mohammad Rafi Sangin, and my Lovely and helping juniors, Sanaullah Habibi and Mohammad Hussain, for their ongoing support. There would be no parachute without any of you.

I am honoured to be part of CCS Haryana Agricultural University, Hisar which provided me a chance to harness and polish my capabilities and talents for bright future.

Ending my note to the people in life who could not make to the list but always make me smile, supported me and bring me joy and for all them who touched my life in any way. All may not have been mentioned in list but none is forgotten.

Place–Hisar ***(Sediqullah Zahid)***

Date – Nov., 2022

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CHAPTER-I

INTRODUCTION

Foreign trade is a vehicle of growth and development and helps not only in procuring the latest machinery, equipment and technology but also the goods and services, which are not available indigenously. Therefore, it occupies a very prominent place in the list of priorities of the economic set up of developing countries because they contribute largely to foreign exchange pool. Export plays a crucial role in the economy of the country. In order to maintain healthy balance of trade and foreign exchange reserve, it is necessary to have a sustained and high rate of growth of export. A product that is sold to the global market is an export, and a product that is bought from the global market is an import. Import allows us to access global products and services at competitive price. It makes possible to access global technology for up-gradation of indigenous production technology, better education, better health and better transport services that otherwise may not have been available to us. This ultimately leads to a better life.

Due to India's varied environment, various kinds of fresh fruits, dry fruits and vegetables are always available. After China, it is the second-largest producer of fruits and vegetables in the world. According to the National Horticulture Database's (Second Advance Estimates) report 2020–21, India produced 200.45 million metric tonnes of vegetables and 102.48 million metric tonnes of fruits. Fruits were grown on an area of 9.6 million hectares, while vegetables were grown on an area of 10.86 million hectares. The majority of fruits exported from the country are grapes, pomegranates, mangoes, bananas, and oranges with the share of nearly 1per cent in the global market.

Bangladesh, the United Arab Emirates, Nepal, the Netherlands, Malaysia, Sri Lanka, the United Kingdom, Oman, and Qatar are major markets for Indian fresh fruits and vegetables.

According to FAO (2020), India ranks second in the production of potatoes, onions, cauliflowers, brinjal, cabbages, and other vegetables and is the world's top producer of ginger and okra. In terms of fruit production, the nation leads the world in the production of bananas (26.29per cent), papayas (43.26per cent), and mangoes (45.14per cent), which include mangos teens and guavas.

Agriculture is a primary livelihood for the majority of Indians and continues to be the backbone of the economy supporting around 58 per cent of the population. It contributes 16.1 per cent to the gross value addition with a growth rate of 4 per cent during 2018-19 (Annual Report 2018-19). The sector has witnessed major quantum jumps in food production since Green Revolution and is reckoned as a surplus nation. India is fortunate in terms of diversified

agro-ecological condition, ensuring food and nutrition security to a larger part of the Indian population through production and stable supply particularly in the last decades.

India is among the leading agricultural products exporter such as tea, sugar, tobacco, spices and products with the agricultural contents (jute, cloth and sugar). Additional, the share of processed food such as mango pulp, dried and preserved vegetable and fruits, meat and poultry items has also increased.

A number of concerns are involved in the export of agricultural products to other nations, but one of the most crucial ones is the quality and sanitary conditions of those products. When a nation's domestic consumption is low and its export volume is large, it might offer more competitiveness on the global market. the country's capacity to generate exportable surpluses, which fluctuates over time and is prone to fluctuations depending on macroeconomic changes that may have an impact on its export potential (Bala *et al*., 2017).

India is the world's tenth-largest exporter of agricultural goods. The top exports are shrimp, meat, rice, and sugar. Rice, wheat, sugar, cotton, fruits, and vegetables are among the major agricultural goods that can be exported "free," whereas exports of pulses (apart from chickpeas) and edible vegetable oil in bulk (apart from coconut and rice bran oils) are "limited" to suit domestic demand. India exported 28,657 crores worth of agricultural products in 2000–01. It grew continuously year after year, reaching a high of 84,444 crores in 2009-10 before rising to 2, 74,571 crores in 2018–19. The only slight declines occurred in the years 2014–15 and 2015–16, when it fell by 9 and 10 percent, respectively. The average annual value of agricultural exports during the decade (2000-10) was 51472 crores, whereas the following decade (2011-19), with an average value of' 221520 crores, saw a multi-time growth. Index data revealed a ten-fold increase in agricultural exports, with a compound average growth rate of 15.72 per cent for the period 2001-2019 (Bhatia *et al*., 2021).

India is the world's largest producer of bananas. Brazil, Ecuador, China, and the Philippines are further big banana-producing nations with 77.5 million hectares of land and a matching 26.5 million of production. A staggering 25.6per cent of the world's total banana crop comes from India. Gujarat, Andhra Pradesh, Karnataka, Bihar, and Uttar Pradesh are the top producing states for mangoes in India. Most of the countries that buy Indian mangoes are the UAE, UK, Saudi Arabia, Qatar, and Kuwait. Indian fruits are, in fact, very popular, especially in the nations that make up the West Asia Nations Association (WANA). India (44.1 percent), China (9.1 percent), Kenya (5.8 percent), and Nigeria (1.8 percent) are the world's top producers of mangoes and guavas (Ushunde, *et al.,* 2016).

The annual growth rates for fruit production, area, and productivity were found to be 3.18, 4.72, and 1.48 per cent, respectively. Between the years 1991–1992 and 2014–2015, the productivity of fruits grew in India, rising from 9.96 MT/ha to 14.2 MT/ha. The results showed that while fruit exports increased over time, which is positive for a nation's economy however at

the same time India's volume of imports was expanding at a considerably faster rate than the rate for exports of commodities (with poor value addition). The exportation of fresh fruits adds significantly more value with the use of sophisticated packaging and fruit treatment technologies. However, more work still has to be done in this industry to increase fruit quality and production efficiency in order to stabilize markets, as well as to make products acceptable and cost-competitive in other importing nations. (Kashish and Dhawan 2017).

Afghanistan is a landlocked country with plains and mountains, located between 29°40′ and 38°40′N and 60°31′ and 75 00′E. Afghanistan is located primarily in central Asia but also in southern Asia. It covers roughly 650,000 km^2 in total. The almost 1000 km long Hindu Kush Mountains divide the country into its north and south. In the province of Badakhshan, Nowshak (7485 m above sea level) is the highest point, and the Amu Darya is the lowest point with (258 m above sea level). Horticulture has always been key to the Afghan economy; it has been important historically and continues to be crucial for a prosperous and stable society today. Afghanistan's climate is extremely favorable for numerous tree crops, vegetable species, and seed production, despite the fact that only roughly 6per cent of its total land area is now under cultivation. Afghanistan was the world's top producer of raisins in the 1960s, and between the 1960s and 1970s, high-value horticulture exports made up 48per cent of Afghanistan's total yearly export earnings. Around US$600 million in exports were made on a yearly basis in the 1970s, with 30per cent being dried fruits and 70per cent being fresh fruits. The FAO reports that grapes make up the biggest percentage of orchard acreage nationwide, followed by apples, almonds, pomegranates, and apricots. Due to the favorable climatic circumstances, farmers grow subtropical trees (mostly orange trees) in the east of the country (Nangarhar province). Pomegranates are grown with their valuable local variety in the provinces of Kandahar, Balkh, Nimroz, and Kapisa (Yousufi 2016).

Agriculture including the processing of agricultural and livestock products provides employment to a bulk of the labour force. About 71.4 per cent of Afghanistan’s population lives in rural areas, most of which are resource-poor farmers whose livelihoods depend on agriculture and livestock. Therefore, Afghanistan's economy is mainly based on agriculture and livestock production (FAO, 2019). The global market of raisins, pistachios, dried apricots, almonds and walnuts is more than 2.2 billion US dollars, of which Afghanistan currently claims less than 3 per cent. Most of these agricultural products were formerly produced on a large scale and continue to enjoy international recognition for quality. For example, raisins are Afghanistan’s primary agricultural export commodity and once accounted for 60 per cent of the world’s market. India, Pakistan and Russia offer large, nearby markets in which Afghanistan agricultural products could begin regaining market share. The world’s largest importers of these products, India for almonds and Russia for dried apricots

are natural regional markets. Low productivity of current orchards and production facilities as well as a lack of machinery for sorting, drying and packaging are the issues facing the industry (Rasoly and Chandrashekar 2018).

Afghanistan has a huge potential of fresh and dried fruits production at global level. Afghanistan is among the top 10 almond producing countries of the world. Almonds are mainly produced in the central region (48 per cent), Northern region (29 per cent) and the western and southern regions (10 per cent) each. Around 75 per cent of the Afghanistan's almonds are hard/medium and hard-shell almonds there is immense potential for Afghanistan to increase exports of dried fruits beyond just regional markets in Pakistan and India (Sultani *et al.*, 2021).

Export performance has a vital role in the economic development process, rapid growth and poverty diminution of many developing countries. As India is one of the largest bilateral trade partners of Afghanistan, the extent of trade relation is not harmonized up to full extent. Since Afghanistan joined south Asia Association Regional Co-operation (SAARC) in 2008, the flow of trading pattern has greatly changed. Afghanistan's destination of markets varied, since from past few years. Afghanistan's trade with India has increased from 17 per cent in 2016 to 23 per cent in 2018. Afghanistan is exporting large number diversified commodities to several countries. From the last three years Afghanistan's exports to India are continuously increasing. During 2016-2018, exports of Afghanistan to India were approximately 1.13 billion dollars (Naseri and Zaka 2021).

The study's finding show that, as of 2016, Afghanistan's exports of agricultural products accounted for around 73.3 percent of all exports, with 61.6 percent of the labour force employed in this industry. After services, which accounted for 19.88 percent of the GDP in 2018, it is one of the main contributors to the nation's GDP. According to simulations using a comprehensive economic model, Afghanistan could increase its GDP growth rate to an average of 5.8 percent per year over the following 10 years by increasing agricultural productivity. Afghanistan must therefore maximize its geographic location advantages in the area in order to fully fulfil its potential for regional and global trade. (Rahimi and Artukoglu 2019).

Based on shared history and culture, India and Afghanistan have a close relationship. The relationship, which has its roots in previous interactions and exchanges between the people, is not just between the administrations in New Delhi and Kabul. The Strategic Partnership Agreement that the two nations inked in 2011 has recently boosted Indo-Afghan relations even more. India and Afghanistan signed a Preferential Trade Agreement in March 2003 to expand trade opportunities. As part of this agreement, India granted large duty concessions to 38 different types of Afghan dry fruits, ranging from 50per cent to 100per cent. Afghanistan now has duty-free access to the Indian market after India reduced the basic customs tariffs on all of its goods (apart from alcohol and tobacco) in November 2011. One of

the main countries to which Afghanistan exports its goods is India. By opening a new transit channel for Afghan trade with India and the rest of the globe, the operation of Iran's Chabahar port might significantly expand Afghanistan's exports. Recently, the Indian government granted USD 85 million for expanding Chabahar Port's capabilities so that Afghanistan might use it as a different commerce transit route (Kumar and Jan 2017).

The most significant crop in the Afghanistan's history has been grapes and raisins, along with melons. In 2018, grapes accounted for 9.84 lakh tonnes of production and were planted on 87,517 hectares in Afghanistan, which was 36per cent of the country's total fruit-growing area. Afghanistan is the 18th-largest producer in the world, producing roughly 1.2 percent of the world's grapes. In 2018, Afghanistan exported 2.91 lakh tonnes of fresh fruit and 1.58 lakh tonnes of dried fruit. Fresh grapes contribute 44per cent of Afghanistan's total fruit exports, while dried grapes (raisin) account for 17per cent. India, Pakistan, Russia, the US, the UK, Germany, and France are the major export destinations of both fresh and dried (raisin) grapes (Mushair *et al.*, 2020).

Due to the fact that the majority of farmers fled from their properties during the ongoing conflicts, Afghanistan's horticulture faces numerous difficulties. Those who fled to safe locations lost their ability to practice horticulture and switched careers. Many had lost their prior abilities or lacked expertise and knowledge when they returned to the nation and began doing horticulture once more many years later.

In the vision of the above concerns, the present study was conducted to update the information related to the export and import of major fresh and dry fruits in India as well as Afghanistan from 2010 to 2019. The study was based on the secondary data collected from various website on exports and imports of fresh and dry fruits with the objectives given as under:

1. To analyse the trends of export and import of fruits and dry fruits in India and Afghanistan
2. To study the export potential of major fruits and dry fruits in Afghanistan as well as India
3. To identify the constraints in export and import of major fruits and dry fruits in India and Afghanistan

CHAPTER-II

REVIEW OF LITERATURE

This chapter contains a review of literature on the study of export and import performance of major fruits and dry fruits in India vis – a – vis Afghanistan.

2.1 To analyse the trends of export and import of fruits and dry fruits in India and Afghanistan

Tarr (1989) found in this study entitled Investigations into stickiness and compaction of dried vine fruit" he found that the dried vine fruit (DVF) sector in Australia is a successful exporter to many other nations, with a significant amount of dried vine fruit being exposed. For instance, 35,500 tonnes of dried sultanas valued about $69 million were exported in 1987–1988. The Australian dried vine fruit sector has established a solid reputation for clean, high-quality dried fruit in a cutthroat global market.

Ashalatha (2000) examined the trends in the area, production, output, and export of cashew kernel, liquid from cashew nut shells, imports of raw cashew nuts, and exports of cashews measured in units for periods I from 1956–1957 to 1970–71 and period II from 1971–72 to 1998–99. Area, production, output, imports of cashew kernels, and exports of cashew nut shell liquid all showed positive trends, however the quantity of exported cashew nut shell liquid had a depressing trend and was determined to be non-significant.

Namasivayam and Paul (2004) estimated the acreage, production, and trend for coconuts in India. In their study, the entire analysis was carried out in three phases, with no connections between them, during the overall study period from 1977–1978 to 1986–1987: I phase, II phase, and III phase. They discovered that the pattern in enlarge rate analysis revealed that the expansion in area, production, and productivity over the years were create positive trends in the first two periods, while in the third stage productivity was negative.

Shibu *et al.*, (2004) used trend analysis based on index amount and rise of speaks to study the tendency analysis of cashew nuts in Kerala, and the results were equivalent. The outcome showed that the area's growth rate was positive during the entire time with stagnating productivity loss and production.

Kumar (2004) described the rising exports of meat and poultry products. He emphasised that India was a net exporter of meat products and that it had gradually increased its share of global meat exports, particularly since the liberalisation process had begun in 1991. During 1990s, India's exports of animal products increased by 12 per cent. The largest share came from buffalo meat, followed by dairy and poultry goods. The largest growth in poultry products was experienced at 23 per cent. Buffalo meat saw a 13 per cent growth from

1990–1991 to 2002–2003, followed by the dairy crop, which experienced a 19 per cent tendency increase. Meat from sheep and goats showed negative growth rates of 5 per cent.

Reddy (2005) revealed from his research that India had a comparative advantage when exporting mango to Dubai and the UK. In this study, the performance of Agro-Export Zones (AEZs) was also analysed, and it was discovered that some of the ten mango AEZs' performance is not up to par. He added that there is a larger need to entice businesspeople and farmers to join in AEZ's activities by creating distinctive processed goods made in India that increase the value of farmers' produce on global marketplaces.

Vijay Kumar (2012) by compiling the export data on fresh and dried grapes (raisins) from 1987 to 2011 did a study on the statistical analysis of grape export from India. Using the total export values for the years 1987 to 2011, the logistic distribution and model's parameters were estimated, and projected export values were made. He came to the conclusion that Saudi Arabia was the most unstable buyer of Indian fresh grapes, while the UK was the steadiest.

Analysis of instability revealed that shipping raisins from India was extremely unstable.

Mukherjee and Mukherjee (2012) examined the patterns and factors that contributed to India's export performance on the global stage. With the progress of time, exports have always played a significant part in the expansion and development of the entire nation. The study emphasised the sizeable market share that India's total exports, including gems, jewellery, cotton, and electronic items, have enjoyed in recent years. In order to strengthen a country's position as a top exporter on the world market, efforts should be made to upgrade the production methods in the areas where it has a comparative advantage over others. They further opined that in order to improve the country's capacity to respond to the changing demands of the environment, the study emphasised the necessity to guarantee rigorous compliance with the market measuring yards.

Majumdar (2013) studied the export performance of processed food in India, applied growth rate analysis. According to the findings, processed food exports from India have grown over time. It showed an upward trend from Rs. 2564 crore in 2001-02 to Rs. 8307 crores in 2009-10, which includes dried and preserved vegetables worth Rs. 532crore, mango pulp worth Rs. 745crore, other processed fruit and vegetable worth Rs. 1435 crores, pulses worth Rs. 408 crores, groundnuts worth Rs. 1425 crores, guargum worth Rs. 1133 crores. However, between 2001-02 and 2009-10, the value of dry fruit and vegetable exports declined from Rs 537 crores to Rs 532 crores during the same time period, the export of confectionery and jaggery also fell from Rs 436 crores to Rs 233 crores.

Rather *et al.*, (2013) on their analytical study on production and export of fresh and dry fruits in Jammu and Kashmir that the agricultural land becomes diversified into horticultural land as a result of the ongoing upward trend in the production and export of fresh

and dry fruits, and the rising production of horticultural products has a direct impact on the income, employment, and standard of living in the state's rural areas. The state's particular climatic conditions favour the cultivation of a variety of vegetation, including horticulture. The area used for fruit agriculture is roughly 3.03 lakh hectares, or about 20 per cent of the total land that is cultivated. However, a lack of a marketing strategy has a negative impact on the sector. The state government must prepare for higher and higher-quality production given the sector's growth possibilities. By cultivating certain items like high-value fruits, vegetables, and cash crops like saffron that can yield significant returns, the state should change its agriculture development approach from one of food security to one of value addition. Fruit output and exports overall, both fresh and dry, have increased. Fresh and dry fruit exports increased from 7.6 lakh metric tonnes in 2003–04 to 8.66 lakh metric tonnes in 2010–11. The total production of fresh and dry fruit increased from 1232.75 thousand metric tonnes in 2004–05 to 1740.62 thousand metric tonnes in 2010–11.

Bisht *et al.*, (2015) conducted their study on export of fruit from India for the period of 2006-07 to 2011-12. They looked at the expansion of key fruit exports (bananas, mangos, and grapes), changes in export direction, and numerous SPS concerns associated with fruit exports. In terms of quantity, mango exports have shown a remarkable growth rate of 6.5 per cent annually. Export price increased significantly by 2.25 per cent annually while export value increased significantly by 8.75 per cent annually. The export of bananas has shown a high positive growth rate of 21.91 per cent annually. Export price and value both grew significantly at the same time, by 3.89 per cent annually and 25.8 per cent annually, respectively. Between 1990–1991 and 2011–12, the growth rates for grape export quantity, value, and price were 12.7, 16.77, and 4.08 per cent, respectively.as per their study UAE was found as most stable market for grapes but in the case of mango; Saudi Arabia and Bangladesh was the stable market. It was advised that as Bahrain, Iran, and the United Arab Emirates were solid banana markets, attention should be given to their market requirements and specifications.

Kuthe and Sachin (2015) investigated the performance of India's exports of other processed fruits and vegetables. Estimated mean, compound growth rate, instability, and diversification were all found in the study. During the study period, the average amount of processed fruits and vegetables shipped to the US, Saudi Arabia, the United Kingdom, the Netherlands, and the UAE was 16857.50, 11939.12, 9777.27, 8963.45, and 7052.52 Metric tonnes, respectively. Regarding value realisation, the same tendency was seen.

Kusuma and Shreeshail (2016) in their study on the production and export performance of onions, used markov chain analysis to estimate the direction of trade and came to the conclusion that Bangladesh was the market for Indian onions with the highest degree of stability, followed by Singapore and Malaysia.

Zai *et al.,* (2016) carried a study on production and export of almonds in Afghanistan. The study focused on four areas connected to Afghan almond production and exports: trends in area, production, and productivity; trends in local consumption and exports of Afghan almonds; SWOT analysis of the Afghan almond subsector; and export routes and issues inherent in these channels. According to the study, there was an increase in area from 2007–2008 to 2014–2015, with the exception of the years 2009–2010 and 2010–2011, which show a decline in the cultivated area with almonds. Almond production was highly unstable from a production standpoint. It demonstrates growth from 2007–2008 to 2009–2010. The amount produced in 2010–11 has dropped. Almond production increased once more during 2010–11 and 2012–13. The production declined steadily from 2012–2013 to 2014–2015.

Radhika and Zahid (2017) examined the production and export of raisins from Afghanistan during the period 2000 to 2014. They assessed that the crucial high-value crop that accounts for the majority of the nation's export revenue is raisins. According to their findings, the area, production, and yield of raisins have all significantly increased and now stand at 1.73, 3.03, and 4.7 per cent, respectively. The main issues with exporting and marketing raisins in Afghanistan were poor harvesting practises, ignorance of export regulations and quality requirements, inadequate packaging, insufficient government backing for marketing and export, and an illogical drying process.

Kashish and Dhawan (2017) carried a study on production and trade performance of fruits in India from 1980–1981 to 2013–2014. According to his findings, the annual growth rates for fruit area, production, and productivity were 3.18, 4.72, and 1.48 per cent, respectively. India had a rise in fruit productivity from 9.96 MT/ha to 14.2 MT/ha. Fruit exports have expanded over time, which is positive for a nation's growth, but as far as commodities (with poor value addition) are concerned, India's volume of imports has been expanding at a considerably faster rate than the growth rate for exports.

Bala *et al.,* (2017) examined the export performance of agricultural product in India. In the study, the trajectory of India's agricultural exports over the previous ten years was analysed, along with the likelihood of increasing them. The study's findings demonstrated an upward trend in agricultural commodity exports, although this was due to changes in the commodities' makeup. In order to increase farm income and diversify crops, it was on the area plantation. Cereals, guar gum, cotton, spices, and sugar all had large increases in their export proportion. The export proportion of fish and marine products, fruits and nuts, coffee, and tea, on the other hand, has decreased. Basmati rice and maize, two cereals, chilies and coriander, two spices, and grapes and mango, two fruits, all experienced rapid expansion. and among the vegetables, onion and potato.

Dar (2017) conducted the experiment on “Production of fresh and dry fruits, a district wise analysis in Jammu and Kashmir”. He stated that the state has seen an increase in the area

planted with horticultural crops Compared to the area used for agriculture. According to the Directorate of horticulture of J&K, the area under major horticultural crop in the state expanded from 2.83 lakh hectares in 2006–07 to 3.25 lakh hectares in 2010–11. He reported that the state has a large potential for all types of fruits. The main fruits farmed in the state include apples, walnuts, cherries, and almonds, among others. According to the 1999–2000 Horticulture Census, Apple covers around 55 per cent of the area. It is significant in terms of output and offers the most surplus that may be sold. In September 2014, Seasonal changes and the floods led to losses for the horticulture sector during the 2014–15 fiscal year. However, the increased output produced some positive outcomes, with exports recorded in 2014–15 at Rs. 4500.00 crores as compared to Rs. 5000.00 crores in 2013–14. According to the economic survey of Jammu and Kashmir, in the fiscal year 2015–16, 14.79 lakh MT of fresh and dry fruits worth Rs 6000.00 crores were exported.

Kashish and Dhawan (2017) provided an analytical study on production and trade performance of fruits in India during the years (1980-81) to (2013-14). The results of their study indicate that both the number and value of exports of various fruits have significantly increased during the investigation period. Fruits hold enormous potential for agricultural economy diversification, economic growth, and poverty reduction. They reported that India is renowned throughout the world for producing some of the best fruits. India produced 81285 MT of fruit in the 2012–2013 period, placing it second in the global fruit production rankings after China. However, India's productivity (12.3 MT/ha) was somewhat greater than China's (11.6 MT/ha). Mango fruit, followed by citrus, bananas, and pineapple among other fruits, occupied the greatest land area in India. They also mentioned in their study that the largest fruit-producing state in India was Maharashtra, followed by Andhra Pradesh. In India, the area and fruit production growth rates over time were found to be 3.18 and 4.72 per cent per year, respectively. Fruit exports also rose more significantly along with the increase in production. In the 2013–14 fiscal year, exports of apples, apricots, mangoes, and grapes reached 37165, 71, 263918, and 148521 tonnes, respectively. In order to meet its fruit needs, India also imported some fruits from other nations, but over time, the import of some fruits, such as mango, grapes, and apple fruits are increased.

Rasoly and Chandrashekar (2018) carried study on export performance of dried fruits from Afghanistan during the years (2010-2017). In their study they mentioned that raisins, almonds, apricots, and pistachios had the biggest proportion of export and income among all fruits, whereas dried fruit provided a significant portion of export and income by exporting to too many countries. According to their analysis, dried fruits account for at least 30 per cent of all exports from Afghanistan and represent the largest share of all exports. According to their study, Afghanistan's exports of dried fruits increased from US$93,502 million in 2010–11 to

US$165,458 million in 2016–17, with a Compound Annual Growth Rate (CAGR) of 9.98 per cent.

Rahimi and Artukoglu (2019) analyzed an Assessment of the Foreign Trade Structure of Afghanistan Agricultural Products (2000- 2018). The primary imports into Afghanistan include food, textiles, equipment, and petroleum items. They looked at how Afghanistan's imports rose from $7384.2 million to $7406.6 million in 2018 but fell to $6534.1 million in 2016. Afghanistan's imports were $1176 million in the fiscal year 2000, but $9096 million in 2012 was a record high for the country. They mentioned China, Pakistan, Iran, Kazakhstan and Uzbekistan as main import partners of Afghanistan. They evaluated that Afghanistan mostly export agricultural products especially fresh and dry fruits which the raisin, fig, grape, pistachio and Almond is the major agricultural exports of Afghanistan. According to their study, India, Pakistan, United Arab Emirates, Iran and China are the top five export partners for Afghanistan.

Hashmi *et al*., (2020) analyzed the performance of external agricultural trade in Afghanistan during the period of political disturbance of about four periods from (1980-2019). The study was carried out to evaluate the performance, growth rate, and instability of exports and imports of the fruits, vegetables, pulses, cereals, and total agricultural products. They understood that Afghanistan's agricultural exports were unstable during the political unrest. The overall period's total agricultural product export had an instability index of 40.46 per cent, while the total agricultural product import had an instability index of 8.98 per cent. The aforementioned findings suggest that the growth patterns of various products from 1980 through 2000 vividly depict the imbalanced picture of agricultural exports and imports.

Mushair *et al.*, (2020) examined the export performance and trade direction of fresh and dried grapes between 2006 and 2018, wherein they concluded that the amount of fresh and dried (raisin) grapes exported increased by 20.76 and 4.48 per cent year, respectively. Both the export quantity and value growth rates demonstrated an upward trend. In terms of fresh grape imports, Pakistan continues to be the most reliable nation. For fresh grapes, there was no change in the direction of grapes from Afghanistan in terms of exports of raisins. In Afghanistan, there was a change in the direction of commerce for raisins. Currently, the most reliable markets for Afghan fresh and dried fruits are the neighboring nations of Pakistan and India. As Pakistan pays very little for Afghan grapes, Afghanistan should focus on other important markets by scientifically producing dried grapes and apricots.

Sultani *et al.*, (2021) conducted a thorough study on a growth and instability in production and export of almond in Afghanistan. They emphasized that almonds were grown in Afghanistan at compound growth rates of 5.77 per cent, 7.37 per cent, and 1.52 per cent, respectively. Medium instability was seen in the area under the almond crop (19, 52), however high instability was seen in the production and productivity (50,05 and 49,01,

respectively) throughout this time. Between 2000 and 2017, exports of almonds increased by 6.12 per cent per year, while consumption increased by 6.75 per cent. Almond exports as well as consumption showed a high level of instability during this time. In order to help farmers, reduce the cost of inputs and raw materials, the study recommended that the government support and provide subsidies to farmers. To positively affect the production and export of almonds from Afghanistan, farmers' general technical knowledge and marketing abilities must be improved. In the almond value chain, this will lead to an increase in production and income for both farmers and traders.

2.2 To study the export potential of major fruits and dry fruits in Afghanistan as well as India

Akhtar *et al.,* (2009) in their study on competitiveness of Pakistani fruits in the world market founded that Pakistan has a comparatively significant and competitive advantage over its primary competitors in the production of mangoes. The RCA values for Pakistan showed an upward trend between 1995 and 1997 and 2003 to 2005. While Mexico showed a significant decline in its RCA value over the investigated period, India, Brazil, and the Netherlands all saw increases in their comparative advantages. During the time period under investigation, consumption increased in Pakistan, Brazil, Mexico, and the Netherlands. Mexico had the highest consumption figures. India cut back on consumption while boosting its comparative edge. They also concluded that according to Pakistan's internal consumption of dates and oranges, which is on the decline, there is potential for higher growth in these items as well as the possibility of larger export earnings, which supports the case for enhancing the nation's competitiveness in these exports.

Suresh and Mathur (2016) carried study on export of agricultural commodities from India for the period 2000 to 2013. They analysed that in India over the time, the comparative advantage of cotton, maize, and various fruits and vegetables increased, whereas it decreased for some plantation crops, rice, and wheat. India is gradually losing its comparative advantage in the production of plantation-based spices and other goods, primarily to Asian nations. Enhancing export competitiveness calls for the production of exportable excess and globally competitive prices. The growth in yield of different crops and agricultural groups varied greatly. A potential element that could affect India's ability to produce an exportable surplus, comparative advantage, and export growth is yield improvements through changes in total factor productivity (TFP).

Rajamohan *et al.,* (2016) conducted a study to determine the export potential of Indian agricultural products. It was evident from the higher levels of agricultural exports relative to imports that the country had worked hard to carve out a niche for itself in the global market. Commodity prices have significantly increased since 2002 as a result of global changes, an open approach, trading platforms, and economic innovation. The patterns of

human demand as well as the means of production to meet those needs underwent enormous changes. The study also brought attention to differences in agricultural product production.

Ushunde *et al.,* (2016) carried a study on the export potentiality of major fruits of India.The study focuses on India's overall export of bananas and mangoes. In their study Tamil Nadu and Uttar Pradesh states were picked for the evaluation of export competitiveness because they are the top producing states for these crops in the nation. In the current study, an effort was made to analyse the trend and growth pattern in the export of mangoes and bananas from India using the Markov Chain analysis method and the compound growth function. Their study concluded that Mango and banana export competitiveness significantly increased after the National Horticulture Mission (NHM). In order to benefit from this, it is necessary to explore other markets, particularly those in the USA, Japan, Poland and other nations where mango is in high demand, in order to increase exports. Consumer preferences in emerging areas, market intelligence, and barriers to increasing exports must all be studied if this goal is to be accomplished. Fruit exports from the nation face intense competition on global markets. They further assessed that in order to capitalise on this and support export producers, developing a federation of "fruits growers and exporters" could help better promote the production, processing, marketing, and export of high-quality fruits in addition to outsourcing the necessary technology.

Girish *et al.,* (2019) in their publication growth of horticulture sector in India: Trends and prospects studied the trends in India's horticultural industry and pinpoints its growth opportunities. About 37 per cent of all agricultural commodities are exported through the horticultural sector, and this percentage has been steadily increasing.

Naseri and Zaka (2021) conducted a study on the export performance of Afghanistan-India merchandise trade: an economic evaluation. The main objective of the study was to analyze the export performance and intensity of Afghanistan-India merchandise trade. In order to evaluate export performance, revealed symmetric comparative advantage index (RSCA), export intensity index (EII) and import intensity index (III) were employedAccording to the rank results, the revealed symmetric comparative advantage (RSCA) results are divided into four groups: the highest revealed symmetric comparative advantage (HRSCA), the highest revealed symmetric comparative disadvantage (HRSCD), the marginal revealed symmetric comparative advantage (MRSCA), and the marginal revealed symmetric comparative disadvantage (MRSCD). Out of the 25 goods that Afghanistan exports to India, 12 are HRSCA-eligible, 7 are MRSCA-eligible, 3 are HRSCD-eligible, and 3 are MRSCD-eligible. The results show that, with the exception of 2010 and 2014, the export intensity between Afghanistan and India throughout the period of 2008–2018 was beneficial. Their study emphasizes that in order to increase the competitiveness of those commodities that have a marginal comparative advantage and disadvantage, Afghanistan

must employ specific measures. Afghanistan needs to expand its market in India, especially for fruits, nuts, saffron, and spices. To increase the export competitiveness of commodities falling within the MRSCD, special actions and fruitful efforts are needed. It is also advised that Afghanistan increase and diversify its export to other nations in order to take advantage of its geographic location. Afghanistan should export more of those commodities that have the highest revealed symmetric comparative advantage and marginal revealed symmetric comparative advantage to India. Political and diplomatic routes between nations, especially those that share a border, are necessary to enhance the volume of cross-border trade.

Rabha and Sarma (2021) in their study on growth and export potential of horticultural crops from India: an overview. The topic was chosen to study the trend in the export performance of Indian horticulture products and to pinpoint the country's top markets for the export of fruits and vegetables. Their study concluded that although India is the world's greatest producer of fruits and vegetables, but overall performance is poor in terms of export, and export volumes have fluctuated over the years rather than increased. Additionally, the export of several commodities, such as walnuts, fresh mangoes, cucumbers, and gherkins (prepared & preserved), as well as mango pulp, has showed a negative growth rate from 2009–10 to 2018–19, primarily because of the high domestic demand. Other limitations include poor quality, a lack of infrastructure, such as cold storage, markets, roads, and transportation facilities, as well as significant post-harvest losses that reduce production per unit area. They concluded that France, the United Arab Emirates, the Netherlands, and Bangladesh are India's top export destinations for fresh fruit and vegetables. The USA, Netherlands, Saudi Arabia, and China are the top exporters of processed fruits and vegetables. India must therefore develop access through the cultivation of high-value horticulture crops, effective supply chain management through collaboration among many stakeholders, and emphasis on pre and post-harvest processing and storage in order to establish itself as a major exporting country.

Ahmad *et al.,* (2021) analyzed the export competitiveness of major fruits and vegetables of Pakistan.Their research used Balassa's revealed comparative advantage (RCA) index and its adaptations to examine Pakistan's key fruits and vegetables' export competitiveness from 2001 to 2018. Mangoes, citrus, and dates have demonstrated comparative benefit, according to the results. For potatoes and onions, the estimated results of numerous RCA indicators demonstrated both comparative advantage and disadvantage. The existence of comparative advantage draws attention to Pakistan's significant export potential for fruits and vegetables. Utilizing this potential can have a big impact on the country's ability to increase exports and foreign exchange, create jobs, and close the trade deficit. The report recommends investing in R&D to uncover innovative strategies for enhancing yield, quality, and post-harvest loss management in order to raise the export competitiveness of fruits and

vegetables. To make Pakistani fruits and vegetables more competitive for export, value chain and infrastructure development are also necessary.

Sharma *et al*., (2022) analyzed relative export competitiveness of Indian agricultural food products vis – a – vis fresh and processed fruits and vegetables. Their research emphasized that India produces the majority of the world's fruits and vegetables, their research also examined the export competitiveness of India and other significant food exporters. Examining the export structure, substitutability, and complementarity of a sample of fresh and processed fruits and vegetables from the top ten food exporters for the years 2010 to 20 is the goal of this study. In the HS 07 product category, the results showed an increase in India's comparative advantage over the 2010–20 period, whereas the advantage was lost in the HS 08 product category to other competing nations. Furthermore, Spearman rank correlation showed that for the HS 07 product category, China, Indonesia, Brazil, Thailand, Argentina, and the European Union are India's main rivals, while for the HS 08 product category, Mexico, Indonesia, Brazil, and Thailand are its top rivals.

2.3 To identify the constraints in export and import of major fruits and dry fruits in India and Afghanistan

Chandra and Kar (2006) in their article on issues and solution of fresh fruits export in India reported for its fresh fruit exports, India continues to be missing or, at best, a minor player in the most of the top markets. Due to the inability of Indian players to forge direct connections with buyers or customers in importing countries, a large share of exports is processed further and then exported again by other countries. They founded some major concerns for promoting the export viz: Lack of varieties suitable for export (high fiber content; unsuitable look and texture; huge stone size), absence of post-harvest facilities like vapour heat treatment, No pack houses from the farm to the harbor and Costly certification process for exports like Eurep-Gap. The export problem was divided into two categories: "Supply Chain Issues," which are inherent to the domestic food supply chain, and "Market Access Issues," which include a variety of criteria and factors influenced by the needs of the target countries.

Bhardwaj *et al.*, (2011) in their study on the challenges and constraints of marketing and export of Indian spices revealed that despite the immense value of spices, it is regrettable that the industry has not developed to the necessary level due to issues with marketing, the supply chain, exports, and pre- and post-harvesting operations. The majority of spice growers are impoverished small-scale farmers who grow spices in addition to other income crops like maize and bananas. Farmers need a fixed and competitive price for their goods in order to feel dedicated to producing spices and provide for their families. If not, they might be tempted to sell food to other consumers on the side or even switch to growing higher-value commodities like cocoa or coffee. Global exporters are also having trouble. On the one hand, they must

work with hundreds of small-scale farmers who demand a fair price for their produce (often through intermediary traders). However, exporters must supply goods that meet the high demands for quality and, increasingly, the social and environmental criteria of unstable markets. High quality management systems and farmer training are needed for this. Still the exports from India are concentrated in developing country markets for most of the fruits and vegetables with low unit price realization.

Mir and Kottaiveeran (2014-2015) reported in their study entitled the problems of export of dry fruits in Jammu and Kashmir, that in addition to exporting other agricultural and horticultural goods, India is the world's largest producer, consumer, and exporter of spices. The dried fruit and nut industry in India is very long-standing. They found that the consumption and demand of dry fruit have increased only in the past few years. Only 3 per cent of the world's demand for dried fruits is met in India, where consumption is close to $2.5 billion. According to their study and the report of Global Strategic Business the dried fruits and edible nuts, improving worldwide market circumstances, and swiftly spreading global economic expansion. There are many different types of dry fruits, including walnut, almond, peach, apricot, pistachio, and hazelnut have a huge domestic demand which causes restriction on export.

Kashish and Dhawan (2017) analysed study on production and trade performance of fruits in India. They identified some of the constraint of fruit export in India such as; significant losses of the quality and investment Due to the perishability of fruits, the difficulty in cultivating with scientific rigour and precision, the lack of a high degree of technical knowledge and skill involvement and abrupt price changes with product introductions are some of the barriers to fruit export.

Thulasiram and Alagumani (2018) conducted a study to identify the constraints faced by the farmers and exporters of fruits and vegetables. They employed Garrett ranking technique to study the problems encountered by the respondents. According to their research, the demand for fruits and vegetables around the world has been steadily increasing, and the country's massive production base offers significant export potential. For the majority of fruits and vegetables, India continues to focus its exports on underdeveloped nations due to poor unit price realisation. Even though India's exports of fruits and vegetables are rising, the export share of total production is still small. The findings showed that failing to fulfil export quality standards and inadequate storage and transportation facilities were the major challenges that fruit and vegetable growers faced. The main issues that the exporters faced were the inadequate infrastructure facilities and the lack of standards for postharvest handling. Therefore, there is great potential for exporting fresh produce, and future export goals are reachable as long as production and quality issues are addressed in a systematic manner.

Thulasiram (2020) in his article on status and constraints in Indian fruits and vegetable export concluded that, with the exception of onion, the export share of the principal fruits and vegetables to the overall production is low. The inability to meet the standards for export quality and inadequate storage and transportation facilities are the main obstacles that fruit and vegetable growers must overcome. The weak infrastructure facilities are clearly the biggest issue the exporters are facing. It was claimed that timely export infrastructure, such as pack houses, high-quality packaging supplies, cool chains, and controlled atmosphere (CA) containers, is not sufficiently available. The second most significant issue raised is a lack of standards for post-harvest processing. This demonstrates the requirement for procedure standardisation and instruction on post-harvest handling as well as controlled and modified atmosphere storage facilities. The documentation process for export is the third significant issue. The availability of market knowledge and plans are unavailable, and there are conflicts between commission agents and auctioneers.

Rahimi and Artukoğlu (2021) conducted a case study in Afghanistan on the problems facing agricultural product exporters and solutions. Their findings revealed that the primary issues faced by exporters of agricultural products from Afghanistan are: a lack of marketing services; inadequate government support; issues with taxes and customs clearance; transit transportation; difficulties in adapting to the global marketing system; ongoing security and civil war issues; difficulties in conducting business with neighbours; issues with education and communication; and a lack of quality control systems. Following correct and reasonable policies regarding incentives to investors, tariffs, and customs fees; strengthening the nation's economic infrastructure; building highways and establishing an appropriate transit transportation system; stepping up security precautions; and raising the added value of domestic export goods are some of the primary solutions to these issues. The country's export potential will improve and may be utilised more effectively if the issues faced by exporters are resolved.

Baliyan *et al.*, (2022) in their study on constraints in mango export from India revealed that mango exports from India are increasing, but not in line with the country's overall production. At the domestic level, a variety of variables have had an impact on the export of mangoes from the nation, including weather-related output changes, expensive transportation, a lack of grading and quality control, excessive pesticide and insecticide use, and marketing issues. Aside from storage facilities, there are additional problems including ineffective post-harvest management, which includes inadequate cooling and packing facilities, careful handling, and adequate control of the environment, including temperature, humidity, proper ventilation, and sanitary conditions. The increase of mango exports from India is also constrained by factors like the acceptability of only a few types for export, high freight costs, a lack of cargo space, high packaging costs, and poor labelling. Incidences of

non- Tariff Measures (NTMs) in mangoes are a hindrance to mango exports globally. However, the government has made numerous attempts to remove the aforementioned obstacles. To increase mango exports both nationally and internationally, however, much more work must be done.

Gechbaia *et al.,* (2021) observed in their study entitled trade and economic relations between Georgia and the Czech Republic: challenges in export and import of agri-food products. They founded that markets in European nations, particularly the Czech Republic's market, have experienced rapid expansion in recent years. These markets, however, are extremely susceptible to both price and quality. They reported that The development of prices for Georgian agri-food goods will have a big impact on the expansion of exports. They concluded in their investigation some elements that have an impact on the pricing structure and value chain of agricultural products. Hazelnut is the biggest food item Georgia exports to the Czech Republic. Given that the confectionery sector started using less expensive hazelnuts, raw materials, and processed goods from new export markets to replace this ingredient, it will be important to establish the course for the development and enhancement of an efficient value chain for nuts. However, European nations have strict criteria for food safety, which agri-food exporters—including those of hazelnuts—must take into account. The volume of agri-food product exports and imports between Georgia and the Czech Republic is restricted in terms of product types. Diversification of export and import items will be necessary for the continued growth of trade and economic relations. There are now major gaps in the export statistics of Georgia's foreign trade, which makes it difficult to assess the trade and economic interactions between nations and impedes productive cooperation. A credible data base for computing foreign trade indices will be created by adjusting the database of pricing for export-import commodities. This will also make it easier to implement foreign trade and bring it in accordance with international standards.

CHAPTER-III

MATERIALS AND METHODS

The investigator must use the proper techniques, processes, and analytical methodology for the sample selection and data collection in order to reach significant conclusions.

In view of this, this chapter has been devoted to outlining the methodological issues used to achieve the goals in consideration. As a result, an effort has been made in this chapter to briefly outline the fundamental methodology, crop location and selection, data collection, and analysis method applied in the current study. The details are presented under the ensuing sub-heading,

3.1 Fundamental methodology

3.2 Location of the study

3.3 Data collection

3.4 Analytical tools and methods

3.1 Fundamental methodology

The research study's methodology deserves consideration in order to achieve its scientific goals and draw applicable results. To analyse the trend in export and import of major fruits and dry fruits in India as well as Afghanistan, to study the export potential of major fruits and dry fruits and identification of the constraints in export and import of major fruits and dry fruits in India and Afghanistan.

3.2 Location of the study

India and Afghanistan are generally selected for the study. India, a country in South Asia, it is the second-most populated nation in the world (1,32 milliard) and the seventh-largest country in terms of area (3,287,263 km^2). Its land borders with Pakistan to the west, China, Nepal, and Bhutan to the northeast, Bangladesh and Myanmar to the east, and the Indian Ocean on the south, Arabian Sea on the southwest, and the Bay of Bengal on the southeast. India's Andaman and Nicobar Islands border Thailand and Indonesia on the sea, while Sri Lanka and the Maldives lie nearby in the Indian Ocean.

Afghanistan is a landlocked, multiethnic country in south-central Asia, occupying 652,864 square kilometers of land. As of 2021, its population was 40.2 million. It is land borders with Pakistan to the east and south, Iran to the west, the Central Asian states of Turkmenistan, Uzbekistan, and Tajikistan to the north. also has a short border with Xinjiang, China, at the end of the long, narrow (Wakhan Corridor), in the extreme northeast.

3.3 Data collection

The study was based on secondary data. The data related to area production and productivity of major fruits and dry fruits were collected from FAO stat, statistical abstract of

India and Afghanistan statistical year book. Whereas, data related to import and export of major fresh fruits and dry fruits in India as well as Afghanistan were collected from published sources viz;, APEDA, Afghanistan statistical year book etc. from year 2010-2019.

3.4 Analytical tools and techniques.

Compound annual growth rate (CAGR) and descriptive statistics were used for analysing trends in export and import of major fruits and dry fruits for both India and Afghanistan. Whereas, to workout export potential of major fruits and dry fruits in India and Afghanistan, revealed comparative advantage (RCA) and revealed symmetric comparative advantage (RSCA) technique were applied.

3.4.1 Compound annual growth rate (CAGR)

To fulfill the first objective of study, secondary data were collected from the various published and unpublished sources, the linear and compound annual growth rate was derived to study the trends of export and import of major fresh and dry fruits in India as well as Afghanistan.

The compound growth rates were computed to use the exponential function of the form:

$$Y_t = ab^t$$

Where,

Y = Dependent variable

a = Constant/intercept

b = Regression coefficient

t = Time variable in year (1, 2, 3... 10)

The compound growth rate was obtained to sue logarithmic form of the equation as below.

$$\text{Log}Y_t = \log a + t \log b$$

Then the per cent compound growth rates (g) was computed by using the relationship:

$$g = (\text{antilog of } \log b - 1) \text{ X } 100$$

Where,

g = Compound growth rate per annum in per cent

The log-inverse (e raised to the power) of the regression coefficient (log b) for the time period (t), minus one (1), multiplied by 100 constitutes the growth rate for each fruit measured and each dependent variable.

$$\text{Growth rate (G)} = (e[\ln b]-1) \text{ x } 100$$

3.4.2 Revealed comparative advantage (RCA) and revealed symmetric comparative advantage (RSCA)

The principles of David Ricardo's comparative advantage theory were used to build Revealed Comparative Advantage (RCA). The theory underlying the application of RCA is that comparative advantage can be assessed based on a country's specialization in exports of a

commodity with reference to some group of countries or the world trade. The index is based on the idea that countries specialize in exporting agricultural products they can produce more affordably or at lower relative cost.

To fulfill the second objective of study, the indices of revealed comparative advantage (RCA) and revealed symmetric comparative advantage (RSCA) was used to estimate the export potential of major fruits and dry fruits in India as well as Afghanistan.

The RCA and RSCA indexes are calculated as follow:

$$\mathbf{RCA_{jk} = (X_k / X_j) / (X_{kw} / X_{jw})}$$

Where:

X_k = Countries' export value of commodity k to World.

X_j = Countries' export value to world of total Agricultural commodities.

X_{kw} = Total exports value of commodity k in world.

X_{jw} = Total Agricultural export value to world

RSCA= RCA-1/RCA+1

3.4.3 Percentage change

A measure of how far the end value differs from the starting value. The following formula was applied to analyse the trend in export and import of major fresh fruits and dry fruits in India as well as Afghanistan

The method of percentage change is statistically expressed as:

$$\mathbf{C = \{(X_2 - X_1) / X_2\} * 100}$$

Where:

C = Relative Change

X_1 = Initial value

X_2 = Final value

Note: the contents for third objective of the study (To identify the constraints in export and import of major fruits and dry fruits in India and Afghanistan**)** was collected from various published research papers and detailed in three categories, first the constraints or challenges faced by farmers or producers of major fresh fruits and dry fruits in India and Afghanistan; second, the problems and challenges faced by agricultural traders in India as well as Afghanistan; and third, the major factors which limit fruits production and export in both the countries.

CHAPTER-IV

RESULTS

The results of investigation "Export and import performance of major fruits and dry fruits in India vis – a – vis Afghanistan" are presented in this chapter along with tables and graphical representations under following headings:

4.1 Trends in export and import of major fruits and dry fruits in India and Afghanistan

4.1.1 Trends in Area, production and productivity of major fresh fruits and dry fruits in India

A. Area

Table 4.1 shows average total area covered by major fresh and dry fruits in India during the study period from the year 2010 to 2019. Mango and peanut covered maximum area among all major fresh fruits and dry fruits with the total average of 2311 and 5096 thousand hectares, respectively. Whereas, fig had the lowest total area *i.e.* about 6 thousand hectares during the study period. Watermelon had the highest compounded annual growth rate in area which has accounts to be 14.1 per cent. While, peanut had lowest compounded annual growth rate of area *i.e.* -2.12 per cent. In case of percent change in year 2019 over 2010, the worth of all area covered by major fresh fruits and dry fruits showed a positive trend except for mango and peanut which calculated -0.01 and -0.19 per cent during the study period, respectively.

B.Production

The average total production of banana during the year 2010 to 2019, has found to be 29214 thousand metric tonnes which was the highest production among all major fresh fruits and dry fruits. As far as dry fruits were concern, peanut had the highest average total production *i.e.* 7443 thousand metric tonnes during the same period. Whereas, mango, orange, papaya and apple came at the second, third, fourth and fifth position with the total average production of 18796, 6946, 5378 and 2285 thousand metric tonnes, respectively. Watermelon had the highest compound annual growth rate in production which accounts to be 21.05 per cent. While, peanut had the lowest compound annual growth rate which found to be -2.04 per cent. In the case of percent change in production during the years 2019 to 2010, all the major fresh fruits and dry fruits showed a positive trend except walnut (-0.11%) and peanut (-0.19%) during the study period (Table 4.1).

C.Productivity

Among all major fresh and dry fruits, papaya had the highest productivity with the total average yield of 41.6 metric tonnes per hectare during the study period.

Table 4.1: Trends in Area, production and productivity of major fresh fruits and dry fruits in India (2010 to 2019)

S. No.	Fruit Name	Mean			CAGR (%)			% change in 2019 over 2010		
A. Fresh fruits		**Area ('000 ha)**	**Production ('000 MT)**	**Yield (MT/ha)**	**Area**	**Production**	**Yield**	**Area**	**Production**	**Yield**
1	Apple	303	2285	7.6	0.85	2.68	1.81	0.90	0.30	0.20
2	Banana	827	29214	35.3	0.43	0.23	-0.20	0.40	0.20	-0.20
3	Grape	123	2348	18.8	2.78	13.19	10.13	0.32	2.45	1.62
4	Mango	2311	18796	8.2	-0.07	2.93	3.00	-0.01	0.33	0.34
5	Papaya	129	5378	41.6	3.46	3.73	0.25	0.41	0.44	0.30
6	Orange	610	6946	11.3	0.38	4.77	4.37	0.40	0.59	0.53
7	Pineapple	104	1680	16.1	1.24	2.12	0.87	0.13	0.23	0.90
8	Pomegranate	183	1926	9.9	10.2	15.67	4.98	1.64	3.29	0.63
9	Watermelon	80	1880	22.8	14.1	21.05	6.10	2.74	5.75	0.81
10	Fig	6	14	2.5	0.64	0.93	0.29	0.64	0.93	0.29
B. Dry fruits										
11	Arecanut	456	679	1.5	2.7	6.54	3.75	0.30	0.88	0.44
12	Cashewnut	1007	724	0.7	1.82	1.94	0.12	0.20	0.21	0.01
13	Walnut	31	36	1.2	0.19	-1.11	-1.30	0.20	-0.11	-0.12
14	Peanut	5096	7443	1.5	-2.12	-2.04	0.08	-0.19	-0.19	0.01

In case of dry fruits, arecanut and peanut had the highest productivity with the total average value of 1.5 metric tonnes per hectare. While, banana had the second highest productivity with the total average value 35.3 metric tonnes per hectare during the study period. Watermelon, grape and pineapple came in third, fourth and fifth position with the total average of per hectare productivity of 22.8, 18.8 and 16.1 metric tonnes, respectively. Grape had the highest compound annual growth rate in productivity which accounts to be 10.13 per cent. Whereas, walnut had the lowest compound annual growth rate which founds to be -1.30 per cent, respectively. In the case of percentage change in productivity during the year 2019 over 2010, the productivity of major fresh fruits and dry fruits showed a positive trend except banana (-0.20%) and walnut (-0.12%) during the study period (Table 4.1).

Year wise data for area, production and productivity for major fruits and dry fruits in India is shown in appendix tables A, to A5.

4.1.2 Trends in Area, production and productivity of major fruits and dry fruits in Afghanistan (2010 to 2019)

The trends in area, production and productivity of major fruits and dry fruits in Afghanistan namely; apple, apricot, fig, grape, melon, watermelon, pomegranate, almond, walnut and pistachio are presented in table 4.2. Appendix tables A6 to A9 present complete annual data for the respective fruits.

A. Area

Area production and productivity of major fruits and dry fruits in Afghanistan are presented in Table 4.2. Result of table revealed that grape and almond covered maximum area among all major fresh fruits and dry fruits in Afghanistan with the total average of 75.0 and 16.9 thousand hectares, respectively. Whereas, fig had the lowest total average of area which was 1.9 thousand hectares during the years 2010 to 2019. At the same period, apple had the highest compound annual growth rate in area which accounts to be 12.4 per cent while pistachio had the lowest compound annual growth rate which founds to be (-0.35%) respectively. The percentage change in area in years 2019 over 2010, all the major fresh fruits and dry fruits shown a positive trend except for pistachio which has calculate to be (-0.03%) during the study period 2010 to 2019.

B. Production

The average production of grape during the study period 2010 to 2019 has founded to be 754 thousand metric tonnes per year which was the highest production among all major fresh fruits and dry fruits. Whereas, in case of dry fruits, almond had the highest average production of 41 thousand metric tonnes per year during the same period. Watermelon, melon, apple and pomegranate came at the second, third, fourth and fifth position with the average production of 433, 348, 123 and 101 thousand metric tonnes, respectively. Apple had the highest compound annual growth rate of production which accounts to be 15.38 per cent.

Table 4.2: Trends in Area, production and productivity of major fresh fruits and dry fruits in Afghanistan (2010 to 2019)

S/NO	Fruit Name	Mean			CAGR (%)			% change in 2019 over 2010		
A. Fresh fruits		**Area ('000ha)**	**Production ('000 MT)**	**Yield (MT/ha)**	**Area**	**Production**	**Yield**	**Area**	**Production**	**Yield**
1	Apple	16.4	123	7.4	12.42	15.38	2.64	2.22	3.18	0.30
2	Apricot	11.5	87	7.8	7.85	6.87	-0.91	1.13	0.94	-0.09
3	Fig	1.9	9	4.5	6.25	10.88	4.35	0.83	1.81	0.53
4	Grape	75.0	754	9.8	3.90	10.86	6.70	0.47	1.80	-1.00
5	Melon	36.4	348	10.1	0.46	2.86	2.39	4.73	3.33	-1.00
6	Watermelon	35.9	433	11.7	6.75	12.91	5.78	0.92	2.37	-1.00
7	Pomegranate	10.7	101	9.0	7.91	6.77	-1.06	1.14	0.93	5.18
B. Dry fruits										
8	Almond	16.9	41	2.7	10.05	-3.75	-12.54	1.61	-0.32	-0.74
9	Pistachio	2.3	3	1.2	-0.35	0.77	1.12	-0.03	0.08	0.12
10	Walnut	3.2	10	3.6	7.76	2.13	5.23	1.11	0.23	-0.42

Whereas, almond had the lowest and negative compound annual growth rate in production which found to be (-3.75%).

In case of percentage change in production during the year 2019 over 2010, almost all major fresh fruits and dry fruits shown a positive trend except for almond which accounts to be (-0.32%) during the study period 2010 to 2019 (Table 4.2).

C. Productivity

Among all major fresh and dry fruits, watermelon had the highest productivity with the total average of 11.7 metric tonnes per hectare during the study period. Whereas, in case of dry fruits, walnut had the highest value of productivity (3.6 MT/ha) followed by watermelon, melon had the second highest productivity with the average value of 10.1 metric tonnes per hectare during the study period. Grape, pomegranate and apricot came in third, fourth and fifth position with an average productivity of 9.8, 9.0 and 7.8 metric tonnes per hectare, respectively. Grape had the highest compounded annual growth rate in productivity which has accounts to be 6.70 per cent. Whereas, almond had the lowest and negative compounded annual growth rate of productivity which founds to be (-12.54%) per cent. In the case of percentage change in 2019 over 2010, productivity of major fresh fruits and dry fruits shown a positive trend for apple (0.30 %), fig (0.53 %), pomegranate (5.18%) and pistachio (0.12%). While, Apricot (-0.09%), grape (-1.00%), melon (-1.00%), watermelon (-1.00%), almond (-0.74%), and walnut (-0.42%) has shown negative trend during the study period 2010-2019 (Table 4.2).

4.1.3 Trends in export and import of major fruits and dry fruits in India

In this part of study those fresh and dry fruits are selected which had the major or highest amount of export and import in India during the period of 2010 to 2019.

4.1.3.1 Trends in export of major fresh fruits from India

The trends in export of major fresh fruits from India namely; apple, banana, grape, mango, papaya, orange pineapple, pomegranate and watermelon are presented in table 4.3. Percent share of each exported major fruits in India's total agricultural export were calculated on the basis of value of respective fruits and presented in table 4.4.

A. Export

Trends in export of major fresh fruits from India from year 2010 to 2019 are presented in table 4.3 and graphical presentation in figures 4.1 to 4.9. Total export of major fresh fruits from India was 320,768 tonnes with the overall value of 135,866 lakh INR in year 2010 has increased up to 643,705 tonnes with the overall value of 426,274 lakh INR in year 2019. The enhancement in value of major exported fruits was recorded by 3.13 times since 2010 onwards. Grape had the highest export among all major fresh fruits with the average quantity of 139,886 tonnes, with a value of 121,497 lakh rupees and 0.63 per cent share in India's total agricultural export.

Table 4.3: Trends in export of major fresh fruits from India (2010 to 2019)

Fruit Name	2010		2019		Mean (2010 to 2019)		CAGR (%)		% Change in 2019 over 2010	
	Qty (Tonnes)	Value Lakh (INR)	Qty (Tonnes)	Value Lakh (INR)	Qty (Tonnes)	Value Lakh (INR)	Quantity	Value	Quantity	Value
Apple	47,493	5,974	19,431	6,911	21,627	5,126	-8.55	-2.82	-0.59	0.16
Banana	60,813	11,453	173,804	53,453	81,891	26,534	11.07	11.73	1.86	3.67
Grape	129,125	46,853	215,216	216,875	139,886	121,497	5.24	11.63	0.67	3.63
Mango	16,484	58,863	40,021	49,659	31,806	49,706	9.28	-1.69	1.43	-0.16
Papaya	15,435	1,726	8,982	3,180	12,852	3,635	-5.27	1.81	-0.42	0.84
Orange	16,649	1,735	54,577	14,355	25,725	5,681	12.61	18.31	2.28	7.27
Pineapple	1,895	403	6,450	2,761	3,674	1,683	13.03	16.09	2.40	5.85
Pomegranate	18,211	7,101	85,429	69,913	43,187	39,332	16.72	20.38	3.69	8.85
Watermelon	12,684	1,450	34,154	6,296	20,194	4,013	10.41	10.92	1.69	3.34
Other fruits	1,979	306	5,641	2,871	3,846	1,680	11.04	19.79	1.85	8.37
Total	**320,768**	**135,866**	**643,705**	**426,274**	**384,688**	**258,886**	**7.21**	**9.18**	**1.01**	**2.14**

Whereas, pineapple had the lowest average quantity of export with 3,674 tonnes with a value of 1,683 lakh rupees and 1.01 per cent share (table 4.4) in India's total agricultural export during 2010 to 2019.

B. Compound Annual Growth Rate (CAGR)

Compound annual growth rate of total export of major fresh fruits in quantity as well as in value term were estimated to be 7.21 and 9.18 per cent during year 2010 to 2019, respectively (table 4.3). Pomegranate had the highest annual growth rate for export in both quantity and value which has showed to be 16.72 and 20.38 per cent, respectively. In the term of quantity, the CAGR for export of all major fresh fruits was found to be positive except apple and papaya which accounts to be (-8.55%) and (-5.27%), respectively. In term of value, the CAGR for export of all major fruits was also calculated positive with the exception of apple and mango which are accounts to be (-2.82) and (-1.69), respectively (Table4.3).

Figure 4.1: Trend in export of apple from India (2010-2019)

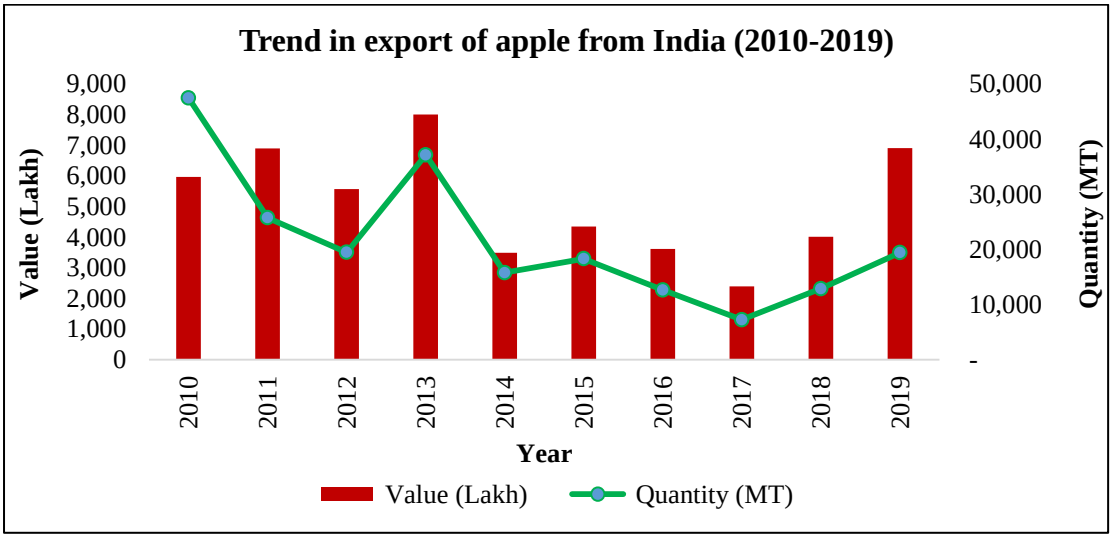


Figure 4.2: Trend in export of banana from India (2010-2019)

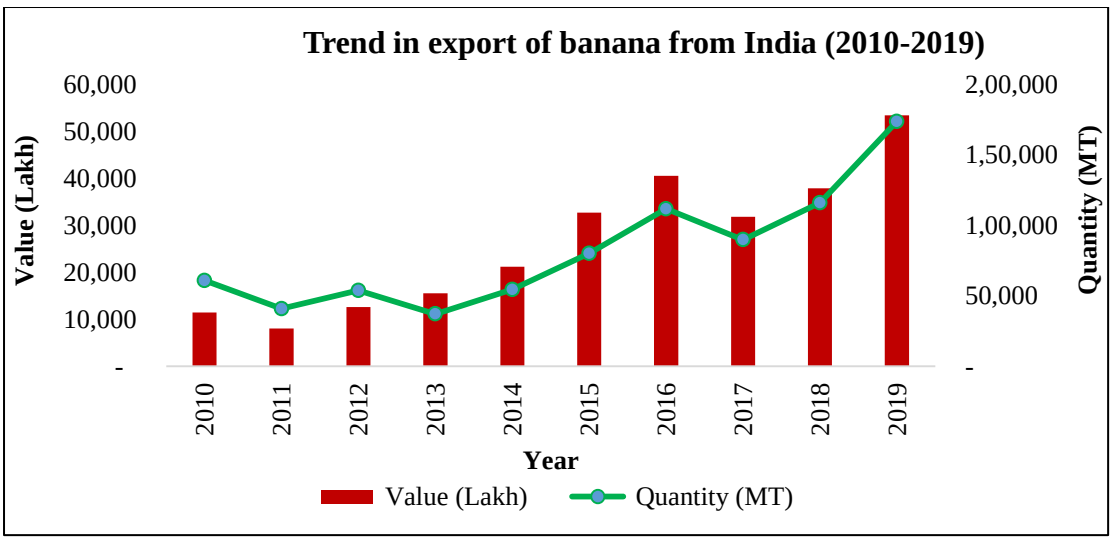


Figure 4.3: Trend in export of grape from India (2010-2019

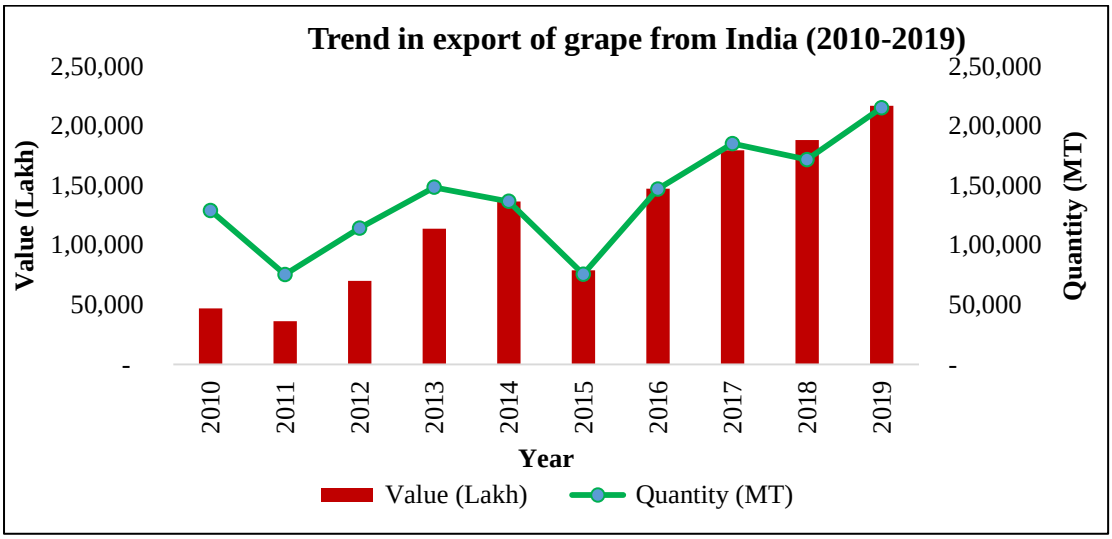


Figure 4.4: Trend in export of mango from India (2010-2019)

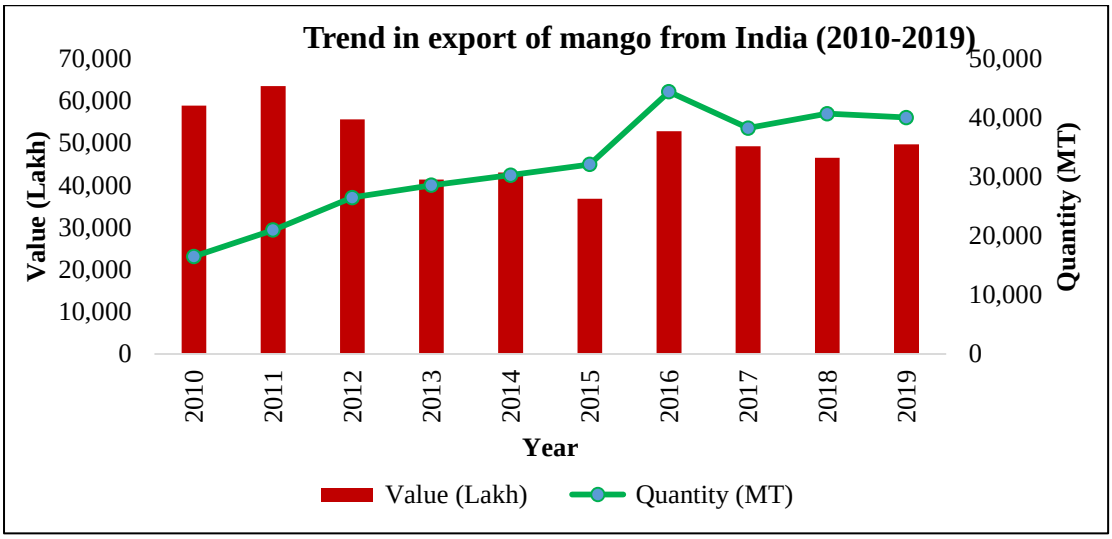


Figure 4.5: Trend in export of papaya from India (2010-2019)

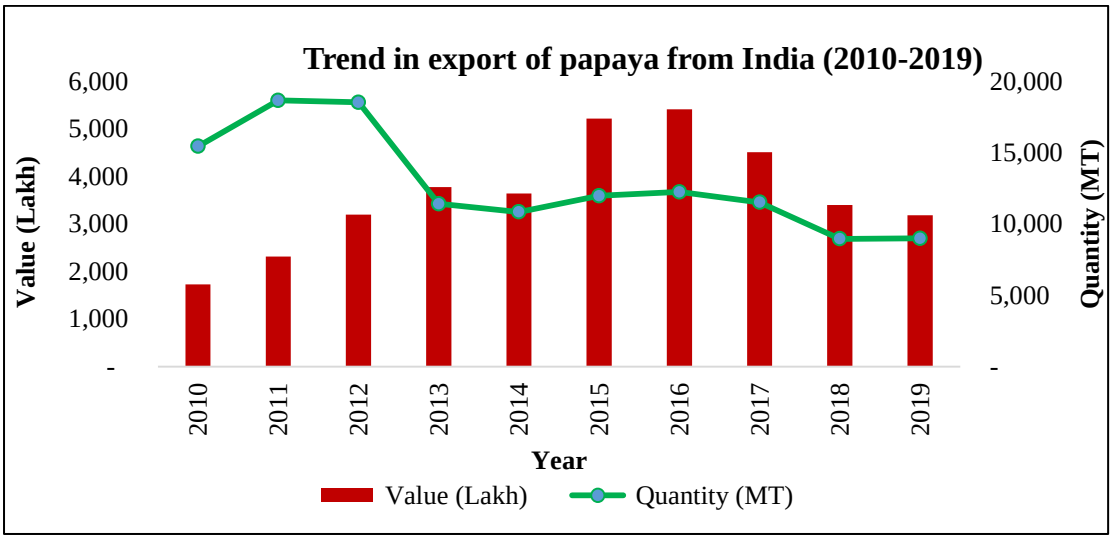


Figure 4.6: Trend in export of orange from India (2010-2019)

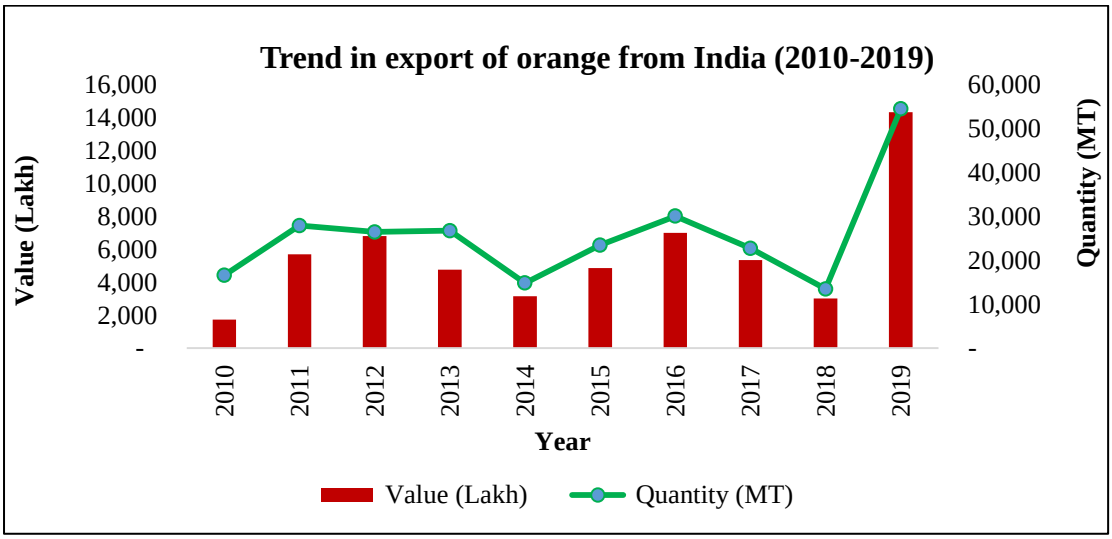


Figure 4.7: Trend in export of pineapple from India (2010-2019)

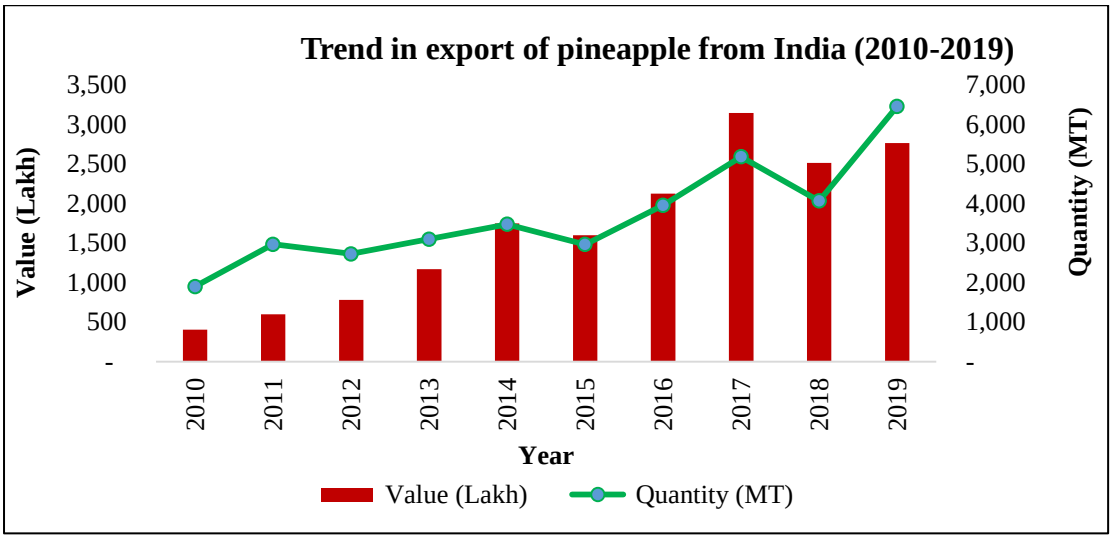


Figure 4.8: Trend in export of pomegranate from India (2010-2019)

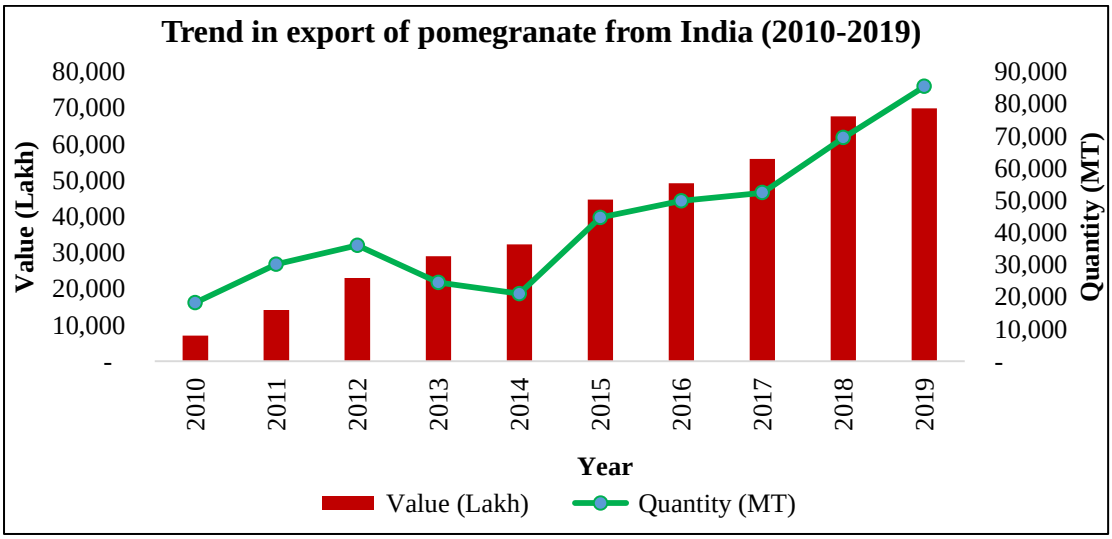
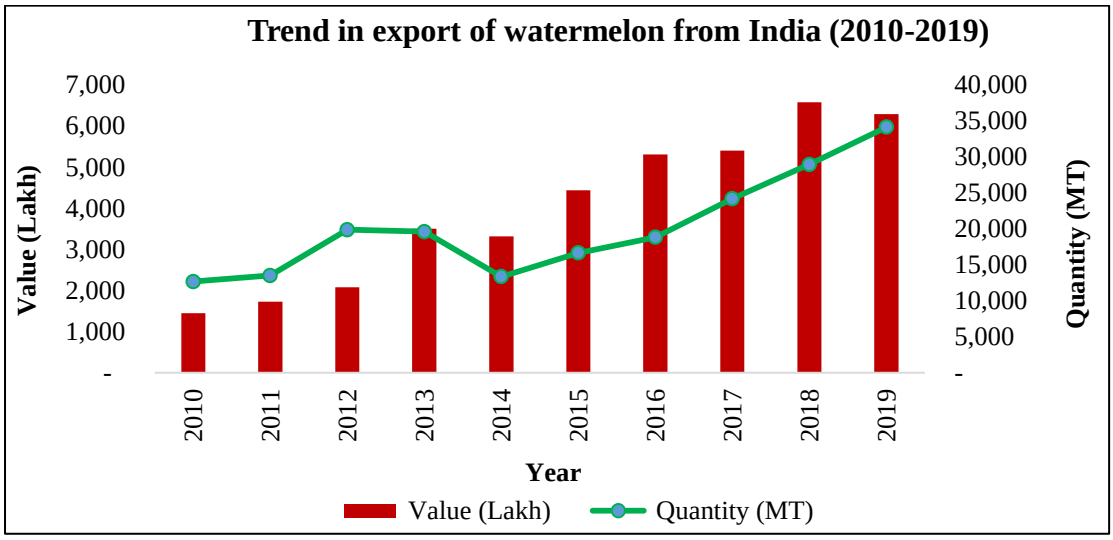


Figure 4.9: Trend in export of watermelon from India (2010-2019)



Results of the table 4.3 exhibited that percent change in overall export of major fresh fruits in term of quantity and value were estimated to be 1.01 and 2.14 percent during the years 2010 to 2019, respectively. Pomegranate experienced the highest percentage change in year 2019 over 2010 for both in quantity as well as in value which accounts to be 3.69 per cent and 8.85 per cent, respectively.

Percent share of major fruits in India's total agricultural export from years 2010 to 2019 are presented in table 4.4. Highest and lowest share of total fresh fruits export in India's total agricultural export was 2.07 and 0.88 per cent in year 2019 and 2012, respectively. While, average share of total fresh fruits was recorded 1.38 per cent during years 2010 to 2019.

Table 4.4: Percent share of major fresh fruits in India's total agricultural export (2010 to 2019)

Fruit Name	**Percent share of each fruit in India's total Agricultural Export based on its value**										
	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	Mean
Apple	0.07	0.05	0.03	0.03	0.02	0.02	0.02	0.01	0.02	0.03	0.03
Banana	0.13	0.06	0.06	0.06	0.10	0.18	0.23	0.16	0.18	0.26	0.14
Grape	0.51	0.26	0.34	0.46	0.62	0.43	0.83	0.91	0.89	1.05	0.63
Mango	0.42	0.30	0.21	0.14	0.17	0.18	0.28	0.23	0.21	0.24	0.24
Papaya	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.02
Orange	0.02	0.04	0.03	0.02	0.01	0.03	0.04	0.03	0.01	0.07	0.03
Pineapple	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.02	0.01	0.01	0.01
pomegranate	0.08	0.10	0.11	0.12	0.15	0.24	0.28	0.28	0.32	0.34	0.20
Watermelon	0.02	0.01	0.01	0.01	0.02	0.02	0.03	0.03	0.03	0.03	0.02
Other fruits	0.00	0.01	0.00	0.00	0.00	0.01	0.02	0.01	0.01	0.01	0.01
Percent share of total fresh fruits	**1.49**	**0.99**	**0.88**	**0.89**	**1.13**	**1.17**	**1.78**	**1.72**	**1.73**	**2.07**	**1.38**

4.1.3.2 Trends in export of dry fruits from India

The trends in export of dry fruits viz; arecanut, cashewnut, raisin, walnut, peanut and dried fig are presented in table 4.5 and figures 4.10 to 4.15. Per cent share of each exported dry fruit in India's total agricultural export was calculated on the basis of value of respective dry fruits and presented in table 4.6.

A. Export

Trends in export of dry fruits in India from year 2010 to 2019 are presented in table 4.5 and figures 4.10 to 4.15. Total export of dry fruits from India was 120,645 tonnes with the overall value of 315,948 lakh INR in year 2010 which has increased up to 162,517 tonnes with the overall value of 629,449 lakh rupees during the years 2019. The enhancement in value of exported dry fruits was recorded by 2 times since 2010. Cashewnut had the highest export among all dry fruits with the average quantity of 105,640 tonnes, with a value of 469,835 lakh INR and 2.55 per cent share (table 4.6) in India's total agricultural export during the study period. Whereas arecanut had the lowest average quantity of export with 3,810 tonnes with a value of 6,115 lakh INR and 0.04 per cent share (table 4.6) in India's total agricultural export during 2010 to 2019.

C. Compound Annual Growth Rate (CAGR)

Compound annual growth rate of total export of major dry fruits in quantity as well as in value term were estimated to be 3.02 per cent and 7.14 per cent during the year 2010 to 2019, respectively (table 4.5). Peanut had the highest annual growth rate of export in both quantity and value which has recorded 29.23 and 41.11 per cent, respectively. In the term of quantity, the CAGR for export has found to be positive for dried fig (10.10%), raisin (18.93%) and peanut (29. 23%). While, in case of arecanut, cashewnut and walnut, it was observed negative *i.e.*-6.24, -1.09 and -13.04 per cent, respectively. In the term of value, the CAGR for export of all dry fruits, were observed positive with the exception of walnut which accounts to be -11.14 per cent during 2010 to 2019 (Table 4.5).

Table 4.5: Trends in export of dry fruits from India (2010 to 2019)

Fruit Name	2010		2019		Mean		CAGR (%)		% Change	
	Qty. Tonnes	Value Lakh (INR)	Qty. Tonnes	Value Lakh (INR)	Qty. Tonnes	Value Lakh (INR)	Quantity	Value	Quantity	Value
Arecanut	4,318	5,469	2,268	6,342	3,810	6,115	-6.24	1.49	-0.47	0.16
Cashewnut	94,238	257,824	84,445	412,052	105,640	469,835	-1.09	4.80	-0.10	0.60
Dried Fig	4,561	14,969	11,935	67,690	8,485	40,071	10.10	16.29	1.62	3.52
Raisin	4,219	2,972	23,879	26,552	22,644	20,093	18.93	24.48	4.66	7.93
Walnut	6,883	18,043	1,702	5,539	4,161	15,787	-13.04	-11.14	-0.75	-0.69
Peanut	2,652	1,324	34,456	41,437	16,628	16,558	29.23	41.11	11.99	30.29
Other fruits	3,774	15,347	3,832	69,837	1,835	41,991	0.15	16.36	0.02	3.55
Total	**120,645**	**315,948**	**162,517**	**629,449**	**163,203**	**610,449**	**3.02**	**7.14**	**0.35**	**0.99**

Figure 4.10: Trend in export of arecanut from India (2010-2019)

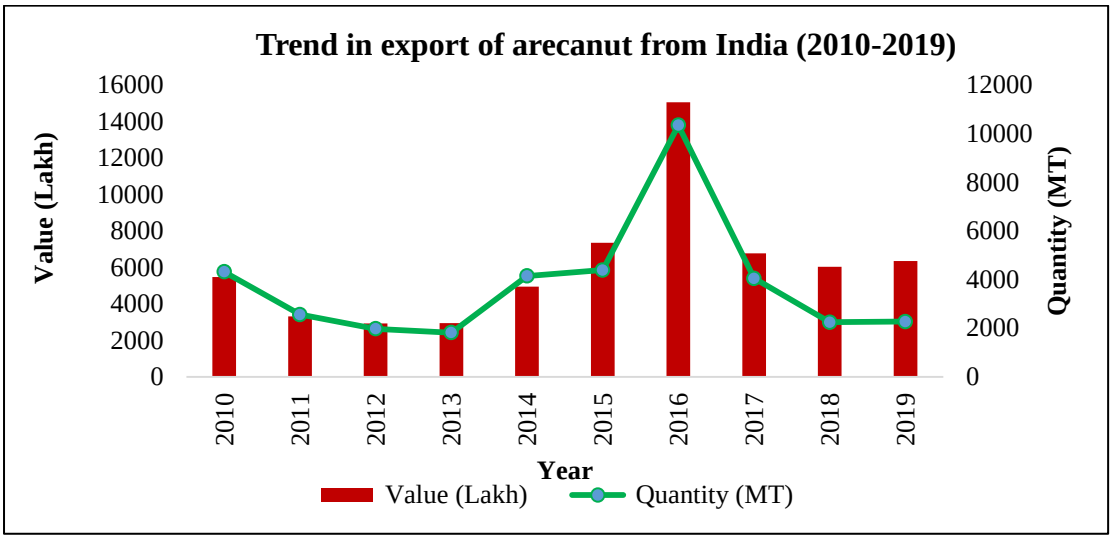


Figure 4.11: Trend in export of cashewnut from India (2010-2019)

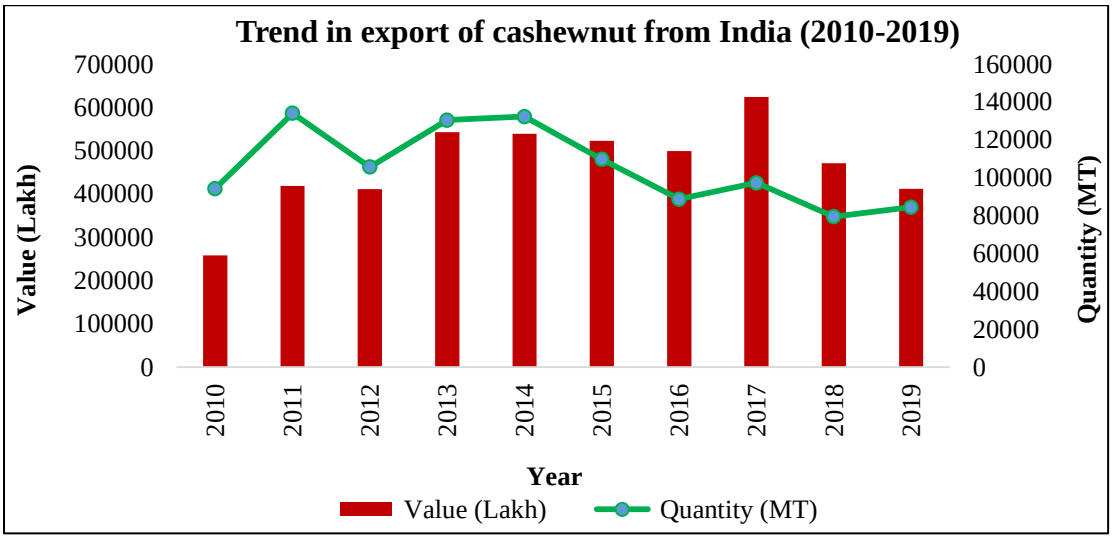


Figure 4.12: Trend in export of dried figs from India (2010-2019)

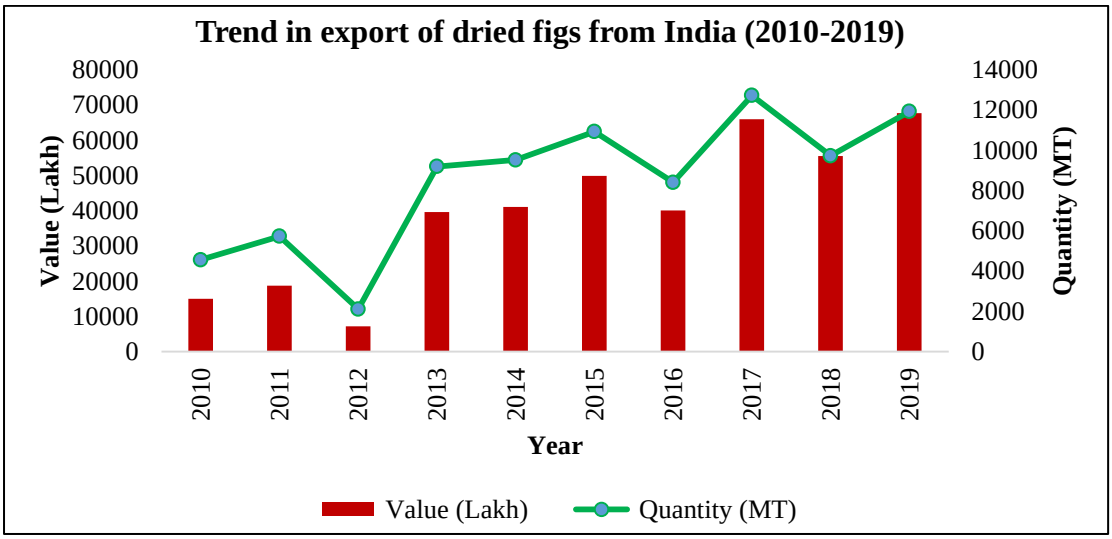


Figure 4.13: Trend in export of raisin from India (2010-2019)

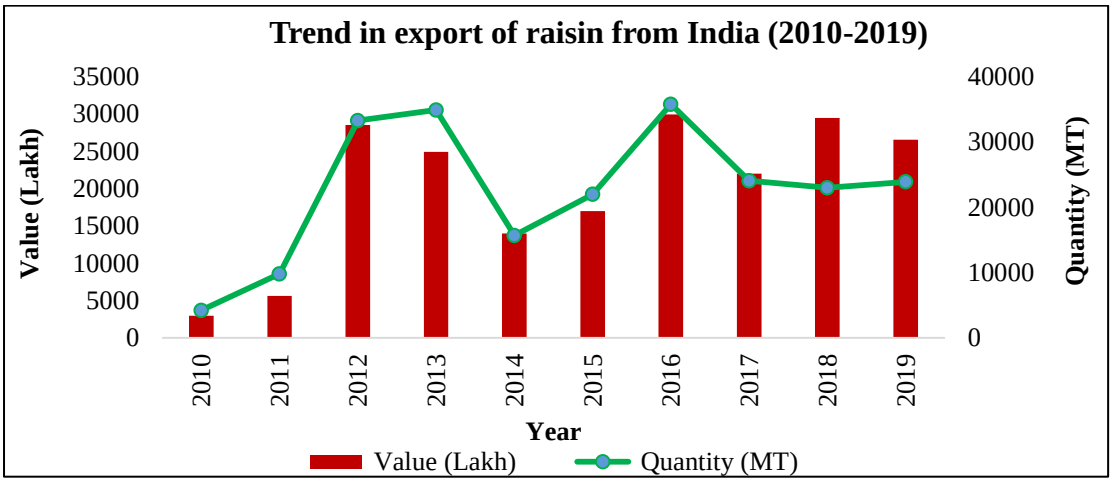


Figure 4.14: Trend in export of walnut from India (2010-2019)

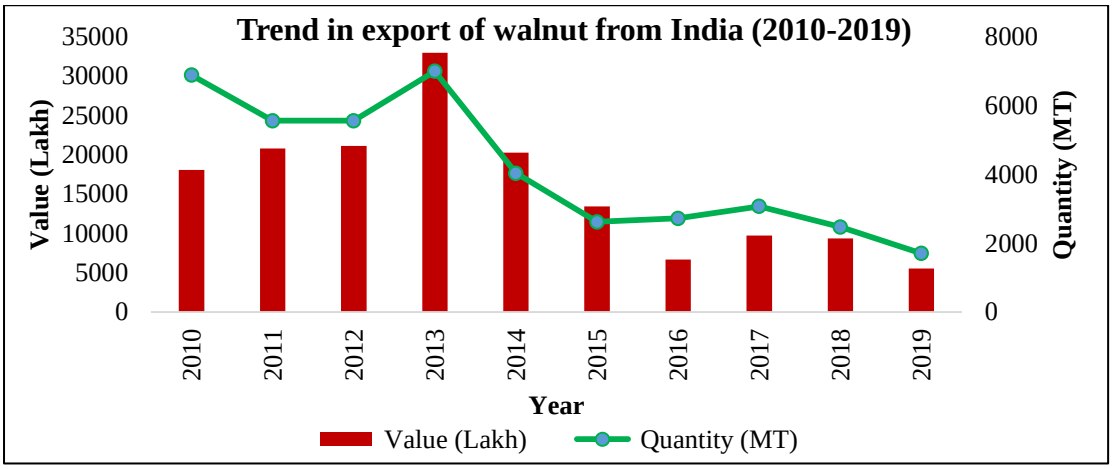
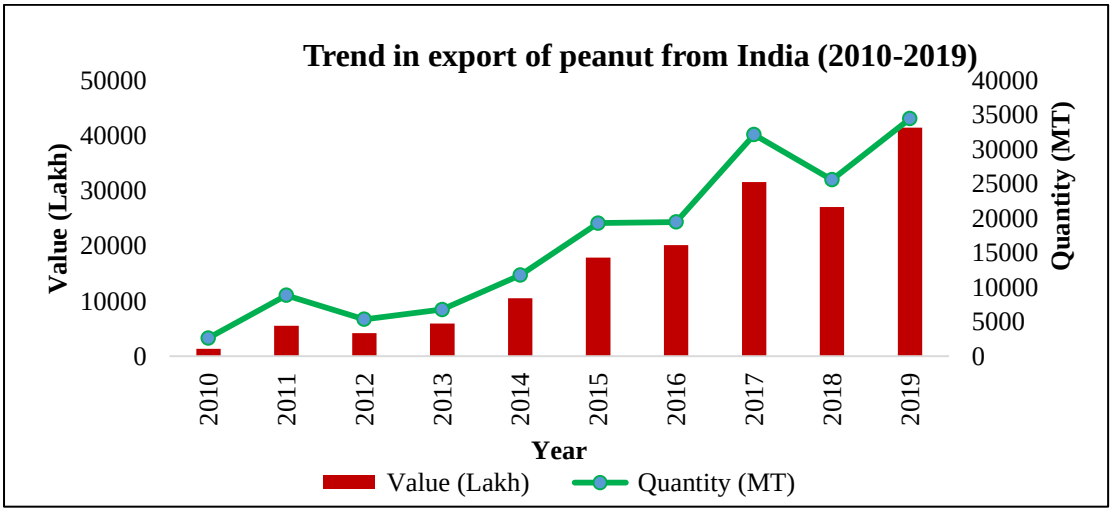


Figure 4.15: Trend in export of peanut from India (2010-2019)



Results of table 4.5 exhibited that percent change in year 2019 over 2010 for overall export of dry fruits in the term of quantity and value has showed to be 0.35 and 0.99 per cent, respectively. Whereas, peanut experienced the highest percent change in the year 2019 over

2010 for both in quantity as well as in value term which has accounts to be 11.99 and 30.29 per cent, respectively.

Per cent share of dry fruits in India's total agricultural export during the years 2010 to 2019 are presented in table 4.6. Highest as well as lowest share of total dry fruits export in India's total agricultural export was 4.18 and 2.37 per cent in year 2017 and 2012, respectively. While, average share of total export of dry fruits was estimated to be 3.29 per cent during 2010 to 2019.

Table 4.6: Per cent share of dry fruits in India's total agricultural export (2010 to 2019)

Fruit name	Per cent share of each fruit in India's total agricultural export based on its value										
	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Mean**
Areca nut	0.06	0.02	0.01	0.01	0.02	0.04	0.08	0.03	0.03	0.03	0.04
Cashew nut	2.82	2.96	2.02	2.18	2.44	2.85	2.80	3.15	2.24	2.00	2.55
Dried Fig	0.16	0.13	0.04	0.16	0.19	0.27	0.23	0.33	0.26	0.33	0.21
Raisin	0.03	0.04	0.14	0.10	0.06	0.09	0.17	0.11	0.14	0.13	0.10
Walnut	0.20	0.15	0.10	0.13	0.09	0.07	0.04	0.05	0.04	0.03	0.09
Peanut	0.01	0.04	0.02	0.02	0.05	0.10	0.11	0.16	0.13	0.20	0.08
Other fruits	0.17	0.13	0.04	0.18	0.20	0.28	0.24	0.34	0.28	0.34	0.22
Per cent share of total dry fruits	**3.46**	**3.48**	**2.37**	**2.78**	**3.05**	**3.70**	**3.67**	**4.18**	**3.13**	**3.05**	**3.29**

4.1.3.3 Trends in import of major fresh fruits in India

The trends in import of major fresh fruits in India namely; apple, grape, kiwi, orange, pear and pomegranate are presented in table 4.7 and graphically presented in figures 4.16 to 4.21. Per cent share of each imported major fresh fruits in India's total agricultural import are calculated on the basis of value of respective fresh fruits and presented in table 4.8.

A. Import

Trends in import of major fresh fruits in India from years 2010 to 2019 are presented in table 4.7. Results of the table revealed that total import of major fresh fruits in India was 129,703 tonnes with the overall value of 59,642 lakh INR in year 2010 which has increased up to 393,764 tonnes with the overall value of 268,410 lakh INR during the year 2019. The enhancement in value of imported fresh fruits were recorded by 4.5 times since 2010. Apple had the highest import among all major fresh fruits with the average quantity of 215,146 tonnes, with a value of 137,169 lakh INR and its share in India's total agricultural import was 1.08 per cent. Whereas pomegranate had the lowest average quantity of import with 1,122 tonnes with a value of 616 lakh INR and its share in India's total agricultural import was 0.01 per cent (table 4.8) during 2010 to 2019.

B. Compound Annual Growth Rate (CAGR)

Compound annual growth rate of total import of major fresh fruits in quantity as well as in value term were estimated to be 11.75 and 16.23 per cent during the year 2010 to 2019, respectively (table 4.7). Kiwi had the highest annual growth rate in export of both in quantity and value which has showed to be 35.23 and 34.24 per cent, respectively. In the term of quantity, the CAGR in import of all major fresh fruits were found positive except pomegranate which was accounts to be -18.81 per cent. In the term of value, the CAGR for import of all major fruits was also calculated positive exception for pomegranate which accounts to be -15.39 per cent during the study period (Table 4.7).

Table 4.7: Trends in import of major fresh fruits in India (2010 to 2019)

Fruit name	2010		2019		Mean		CAGR (%)		% Change in 2019 over 2010	
	Qty. Tonnes	Value Lakh (INR)	Qty. Tonnes	Value Lakh (INR)	Qty. Tonnes	Value Lakh (INR)	Quantity	Value	Quantity	Value
Apples	93,264	42,317	242,713	171,791	215,146	137,169	10.04	15.04	1.60	3.06
Grapes	2,861	2,787	8,159	9,367	4,825	6,326	11.05	12.89	1.85	2.36
Kiwi fruit	2,112	1,707	43,205	32,443	17,100	14,834	35.23	34.24	19.46	18.00
Orange	9,614	3,591	72,902	29,136	46,075	17,234	22.46	23.29	6.58	7.11
Pears	13,830	4,340	20,059	15,916	19,558	11,112	3.79	13.88	0.45	2.67
Pomegranate	3,302	1,573	411	296	1,122	616	-18.81	-15.39	-0.88	-0.81
Other fruits	4,720	3,326	6,315	9,462	4,765	8,154	2.95	11.02	0.34	1.84
Total	**129,703**	**59,642**	**393,764**	**268,410**	**308,591**	**195,445**	**11.75**	**16.23**	**2.04**	**3.50**

Figure 4.16: Trend in import of apple in India (2010-2019)

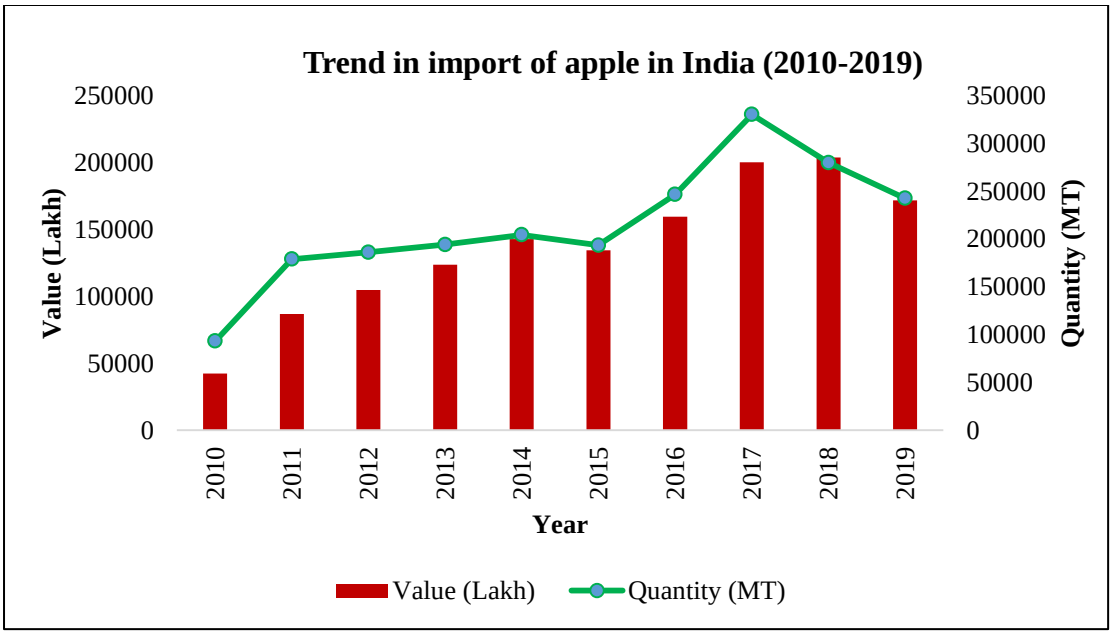


Figure 4.17: Trend in import of grape in India (2010-2019)

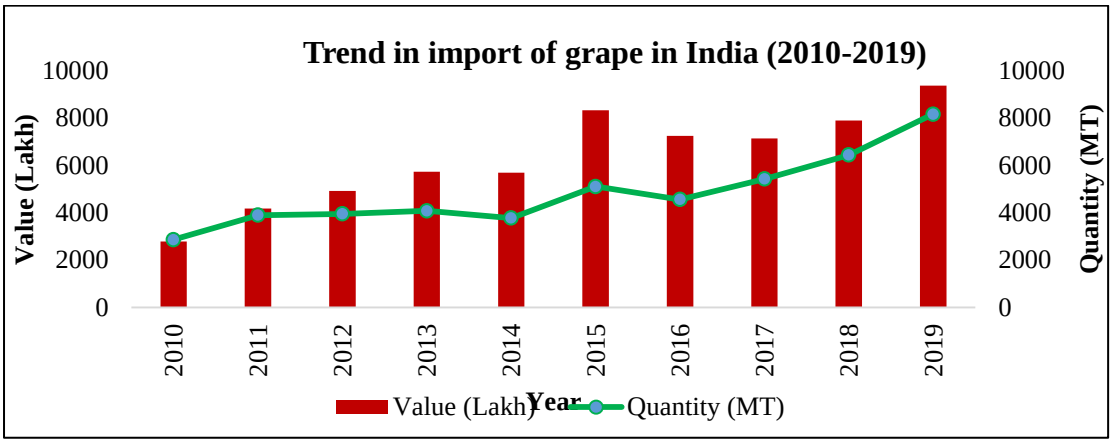


Figure 4.18: Trend in import of kiwi in India (2010-2019)

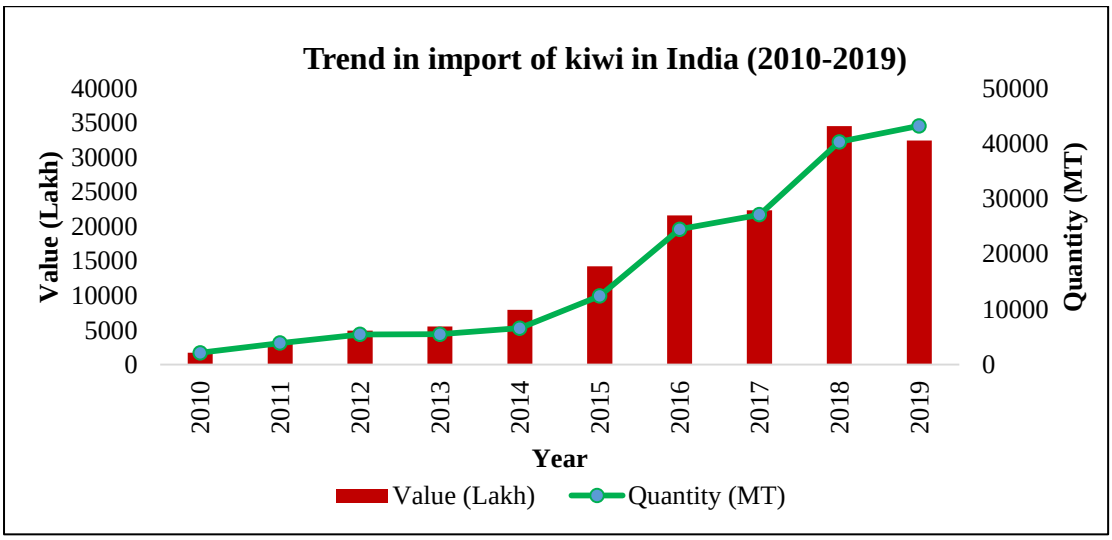


Figure 4.19: Trend in import of orange in India (2010-2019)

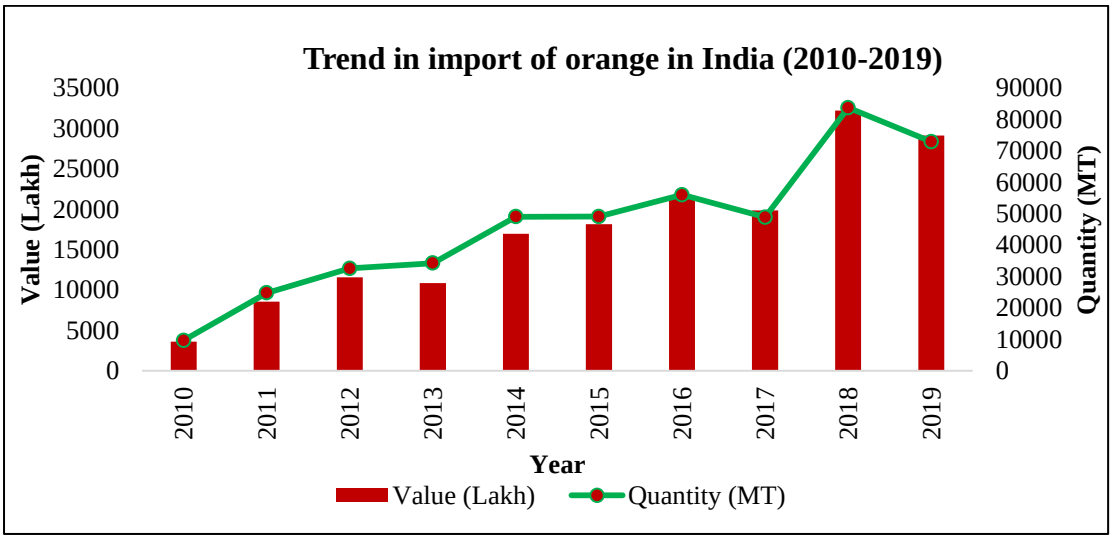


Figure 4.20: Trend in import of pear in India (2010-2019)

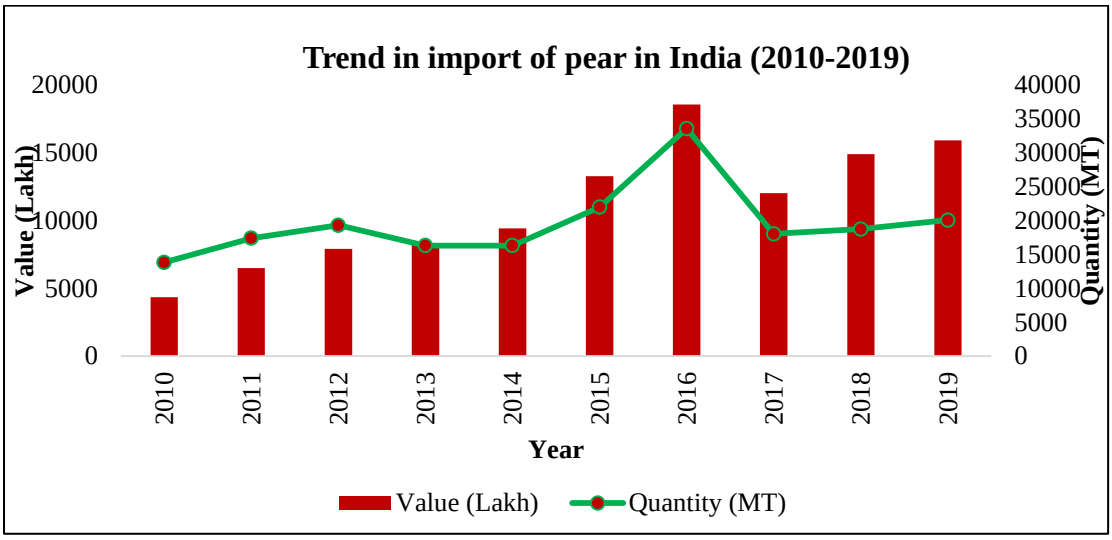
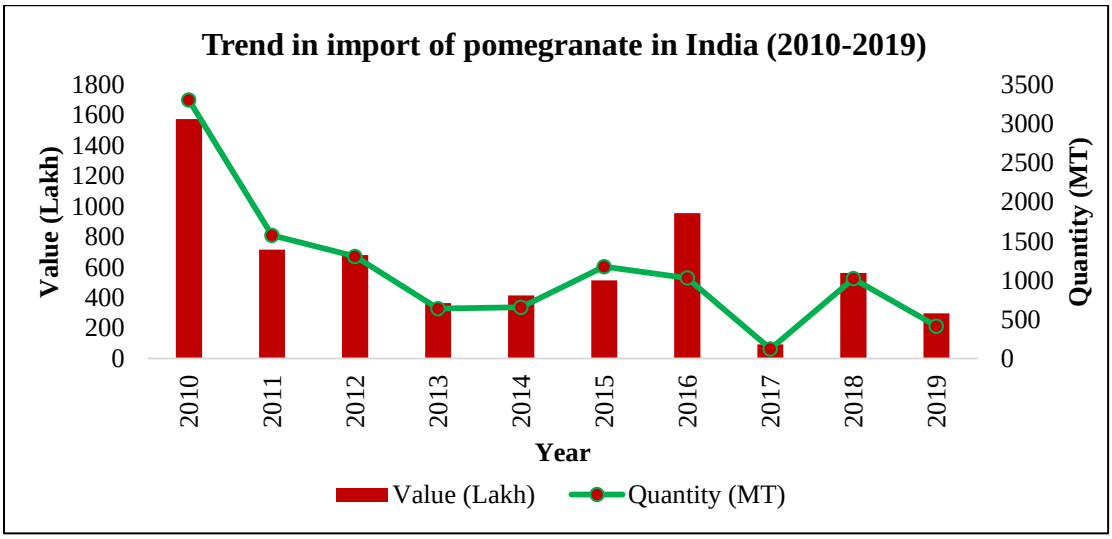


Figure 4.21: Trend in import of pomegranate in India (2010-2019)



Per cent change in year 2019 over 2010 for overall import of major fresh fruits in the term of quantity and value has showed to be 2.04 and 3.50 percent, respectively. Kiwi fruit experienced the highest percent change during the years 2010 to 2019 for both in quantity and value term which has accounts to be 19.46 and 18.00 per cent, respectively (Table 4.7).

Per cent share of major fresh fruits in India's total agricultural import from year 2010 to 2019 are presented in table 4.8. Highest and lowest percent share of total fresh fruits in India's total agricultural import was 2.02 and 1.26 and per cent in year 2018 and 2010, respectively. While, average percent share of total fresh fruits was estimated to be 1.54 per cent during year 2010 to 2019.

Table 4.8: Per cent share of major fresh fruits in India's total agricultural import (2010 to 2019)

Fruit name	Per cent share of each fruit in India's total Agricultural import based on its value										
	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Mean**
Apple	0.89	1.10	1.00	1.12	1.10	0.94	0.99	1.12	1.38	1.12	1.08
Grape	0.06	0.05	0.05	0.05	0.04	0.06	0.04	0.04	0.05	0.06	0.05
Kiwi fruit	0.04	0.04	0.05	0.05	0.06	0.10	0.13	0.13	0.23	0.21	0.10
Orange	0.08	0.11	0.11	0.10	0.13	0.13	0.13	0.11	0.22	0.19	0.13
Pear	0.09	0.08	0.08	0.07	0.07	0.09	0.11	0.07	0.10	0.10	0.09
Pomegranate	0.03	0.01	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01
Other fruits	0.07	0.51	0.05	0.02	0.02	0.05	0.01	0.02	0.03	0.06	0.09
Per cent share of total fresh fruits	**1.26**	**1.91**	**1.33**	**1.42**	**1.43**	**1.37**	**1.43**	**1.49**	**2.02**	**1.76**	**1.54**

4.1.3.4 Trends in import of dry fruits in India

The trends in import of dry fruits in India viz; almond, dried apricot, arecanut, cashewnut, dates, dried fig, pistachio, raisin and walnut are presented in table 4.9 and graphically presented in figures 4.22 to 4.30. Per cent share of each imported dry fruits in India's total agricultural import are calculated on the basis of value of respective dry fruits and presented in table 4.10.

A. Import

Trends in import of dry fruits in India from year 2010 to 2019 are presented in table 4.9. The results of the table revealed that total import of dry fruits in India was 733,165 tonnes with the overall value of 402,857 lakh INR in year 2010 which has increased up to 1,398,458 tonnes with the overall value of 1,857,511 lakh INR during the year 2019. The enhancement in value of imports of dry fruits was recorded by 4.6 times since year of 2010. Cashewnut had the highest import among all major fresh fruits with the average amount of 796,597 tonnes, with a value of 699,940 lakh INR and its share in India's total agricultural import was 5.49 per cent (Table 4.9 & 4.10). Whereas, dried apricot had the lowest average of import quantity of 3,724 tonnes with a value of 8,680 lakh INR and per cent share in India's total agricultural import was 0.07 per cent during year 2010 to 2019 (Table 4.9 & 4.10).

B. Compound Annual Growth Rate (CAGR)

Compound annual growth rate of total import of major dry fruits in quantity as well as in value term were calculated to be 6.67 and 16.51 per cent, respectively. Walnut had the highest annual growth rate in import for both quantity and value term which has showed to be 97.54 and 110.17 per cent respectively. While, CAGR for import of all dry fruits found positive in

both quantity and value term which was 6.6 and 16.51 per cent during the study period, respectively (Table 4.9)

Table 4.9: Trends in import of dry fruits in India (2010 to 2019)

Fruit name	2010		2019		Mean		CAGR%		% Change in 2019 over 2010	
	Qty. Tonnes	Value Lakh (INR)	Qty. Tonnes	Value Lakh (INR)	Qty. Tonnes	Value Lakh (INR)	Quantity	Value	Quantity	Value
Almond	55,066	105,125	166,900	599,080	112,761	381,384	11.73	19.01	2.03	4.70
Dreid Apricot	2,682	3,375	4,143	12,184	3,724	8,680	4.44	13.70	0.54	2.61
Arecanut	12,331	9,506	13,614	27,060	24,625	32,179	0.99	11.03	0.10	1.85
Cashewnut	453,237	206,323	856,353	801,439	796,597	699,940	6.57	14.53	0.89	2.88
Dates	193,467	43,459	281,961	115,497	308,043	111,134	3.84	10.27	0.46	1.66
dried Fig	4,561	14,969	11,935	67,690	8,485	40,071	10.10	16.29	1.62	3.52
Pistachio	5,012	15,907	16,725	120,571	10,950	61,886	12.81	22.45	2.34	6.58
Raisin	5,748	3,996	24,924	75,441	13,904	32,200	15.80	34.15	3.34	17.88
Walnut	19	21	17188	35362	6699	13043	97.54	110.17	903.63	1680.16
Other fruits	1042	176	4715	3189	2189	1174	16.30	33.60	3.52	11.90
Total	**733,165**	**402,857**	**1,398,458**	**1,857,511**	**1,287,976**	**1,381,691**	**6.67**	**16.51**	**0.91**	**3.61**

Figure 4.22: Trend in import of almond in India (2010-2019)

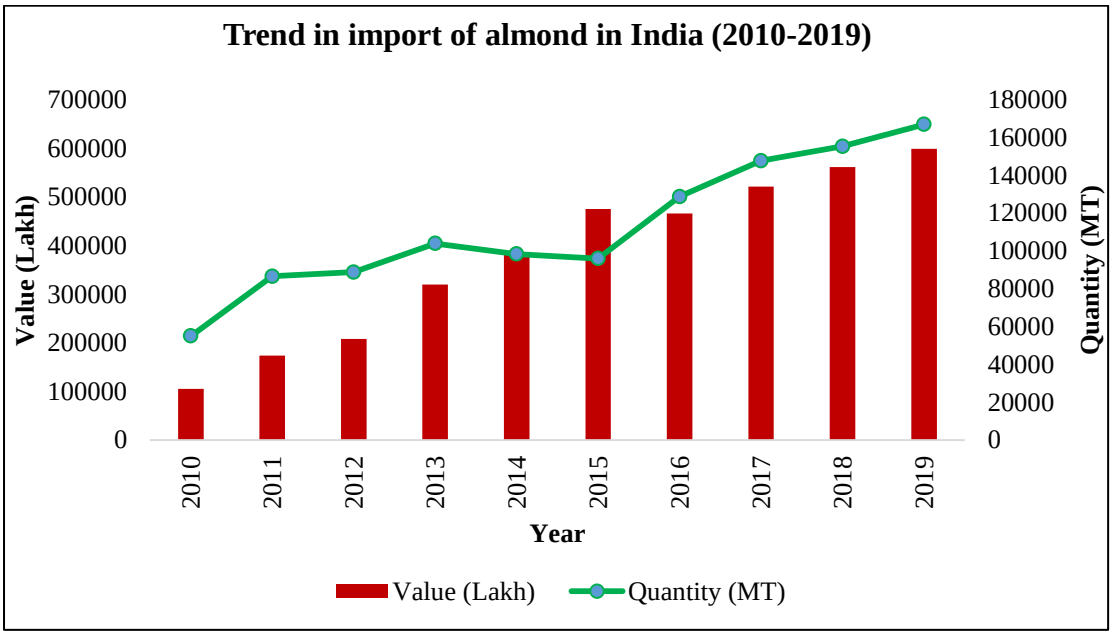


Figure 4.23: Trend in import of dried apricot in India (2010-2019)

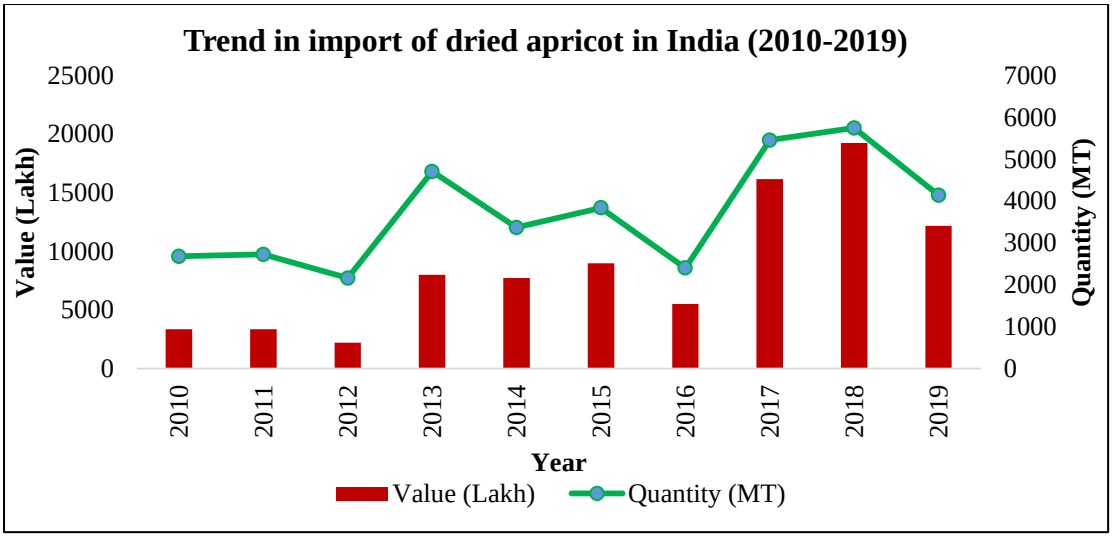


Figure 4.24: Trend in import of arecanut in India (2010-2019)

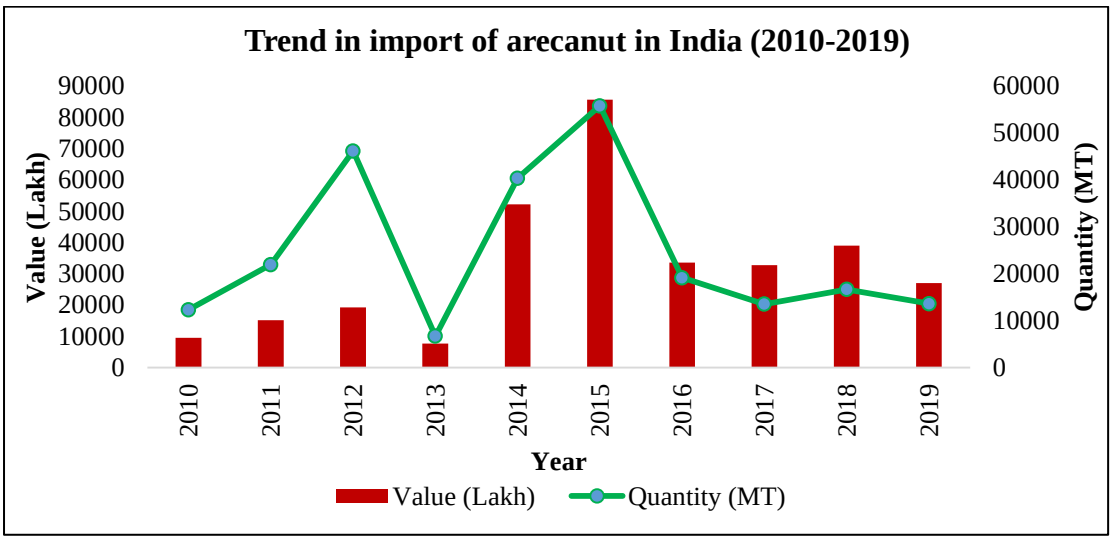


Figure 4.25: Trend in import of cashewnut in India (2010-2019)

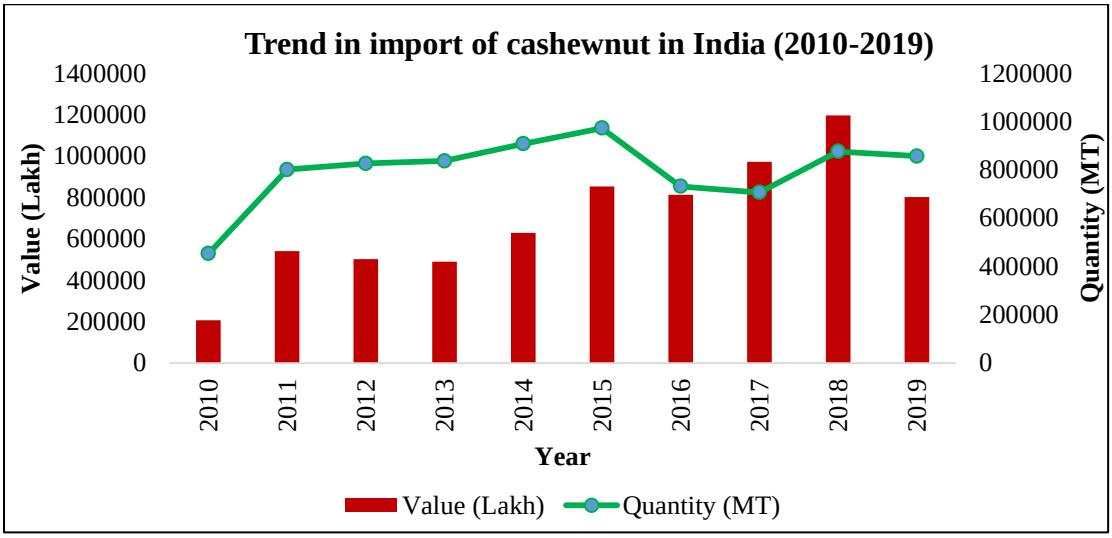


Figure 4.26: Trend in import of dates in India (2010-2019)

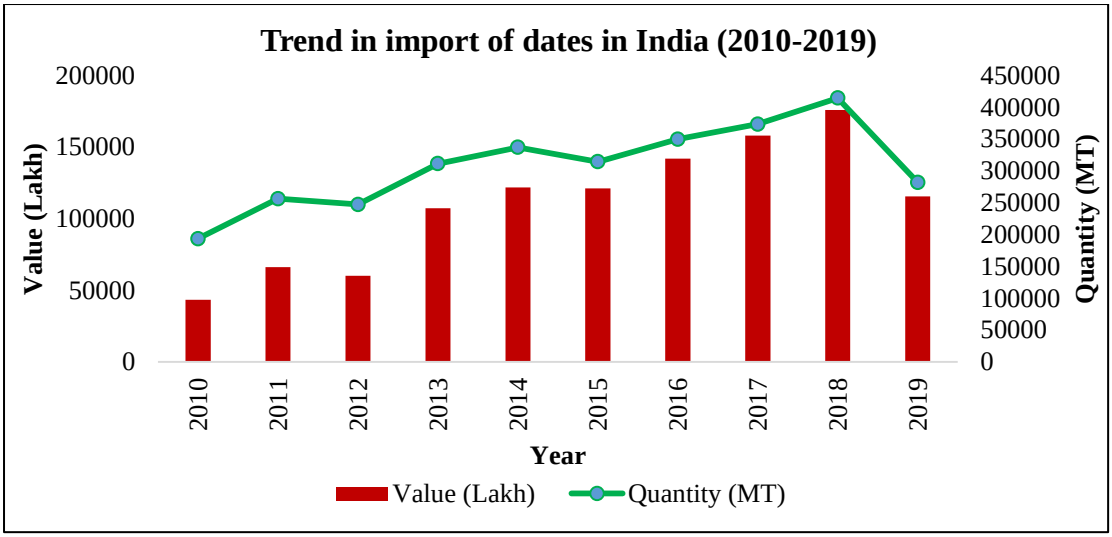


Figure 4.27: Trend in import of dried figs in India (2010-2019)

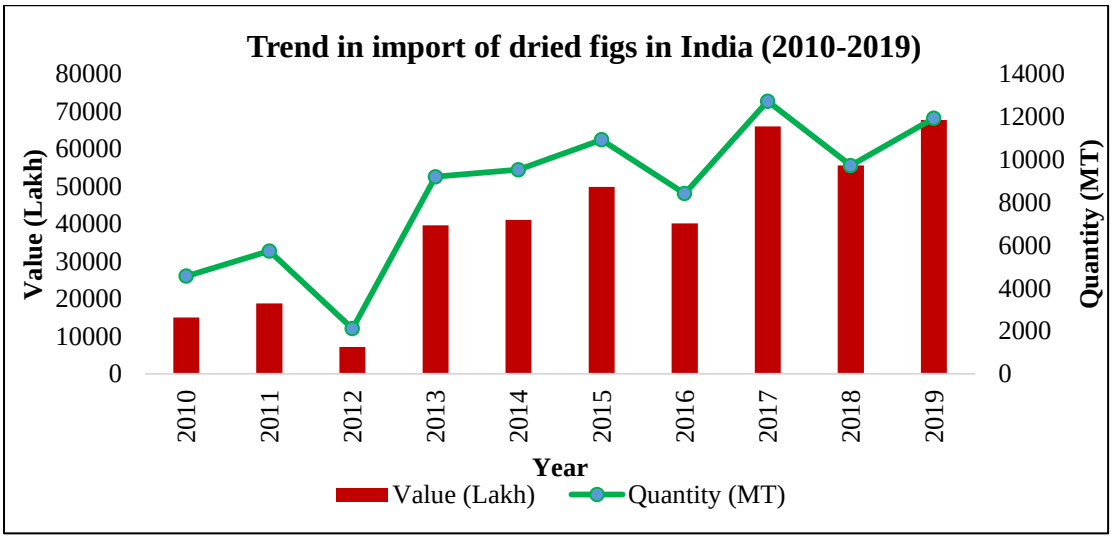


Figure 4.28: Trend in import of pistachio in India (2010-2019)

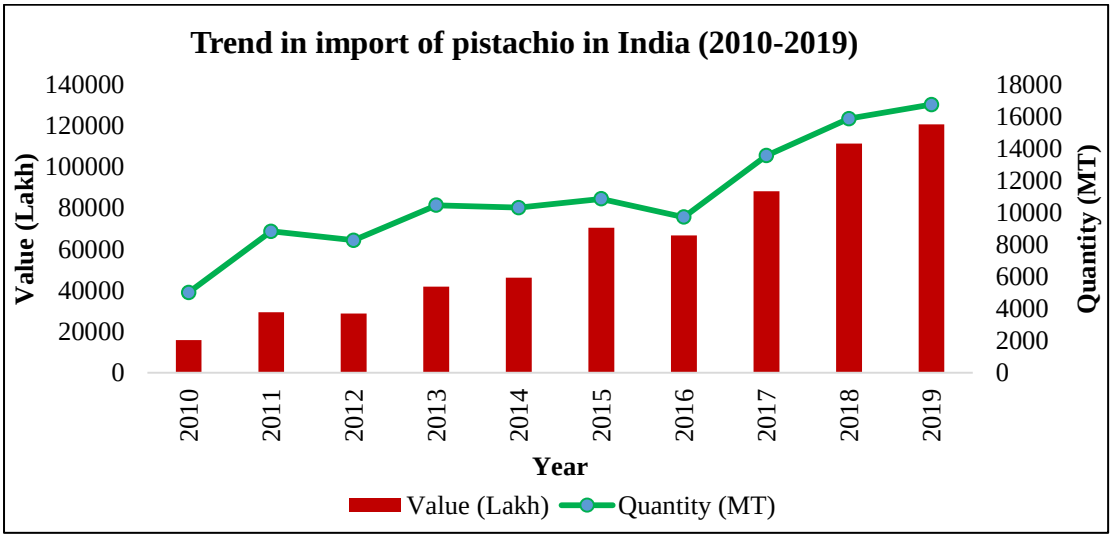


Figure 4.29: Trend in import of raisin in India (2010-2019)

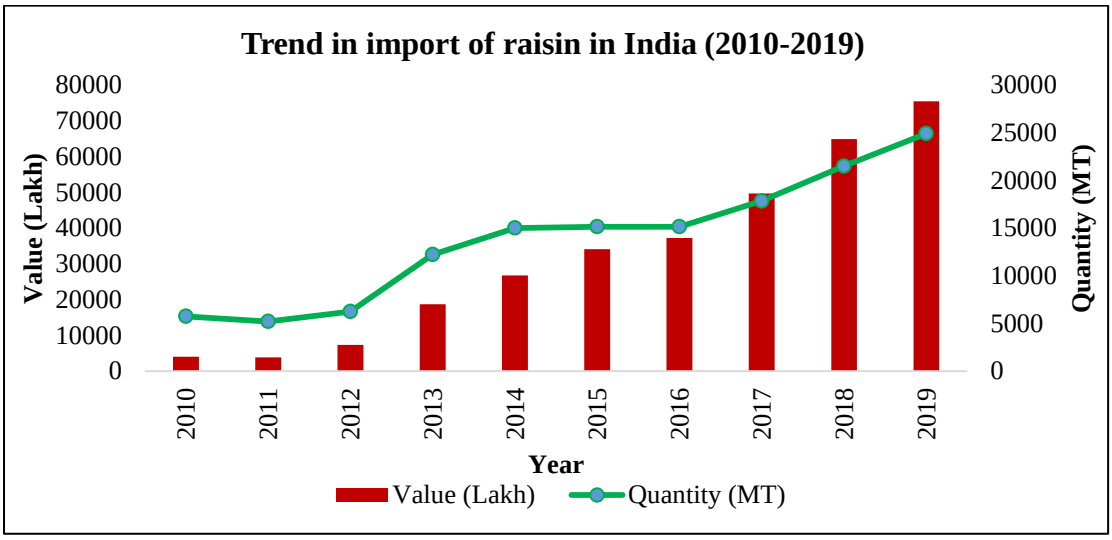
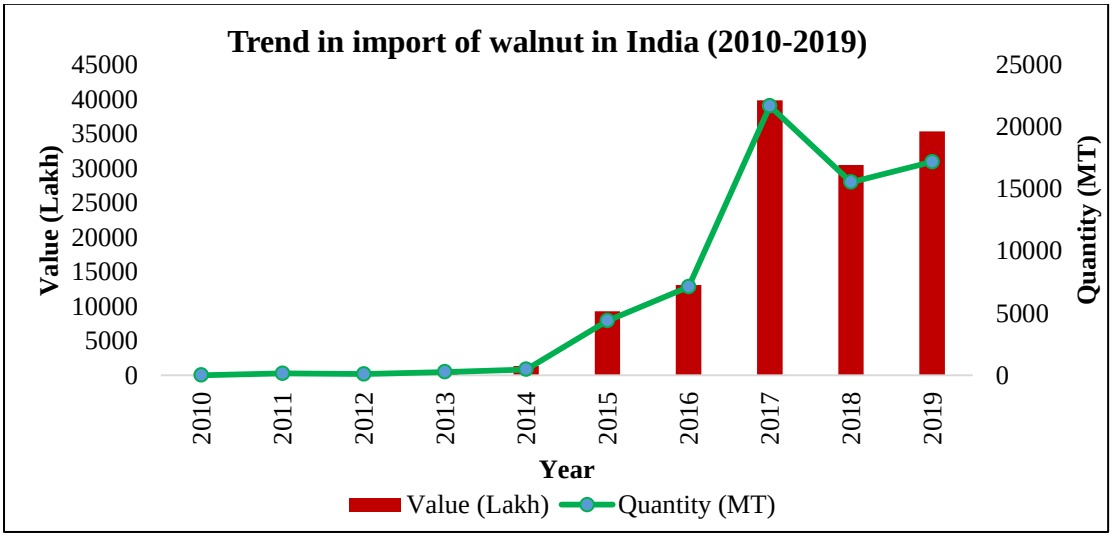


Figure 4.30: Trend in import of walnut in India (2010-2019)



Results revealed that per cent change in year 2019 over 2010 for overall import of dry fruits in the term of quantity and value has estimated to be 0.91 and 3.61 percent, respectively. Walnut experienced the highest percent change in year 2019 over 2010 for both quantity and value which has accounts to be 903.63 and 1680.16 per cent, respectively, Whereas, arecanut had the lowest percent change of quantity (0.10%) and value (1.85%) during the year 2010 to 2019.

Per cent share of major dry fruits in India's total agricultural import from year 2010 to 2019 are presented in table 4.10. Highest and lowest percent share of total dry fruits import in India's total agricultural import was 15.21 and 7.93 percent in 2018 and 2012, respectively. While, percent share of total dry fruits were accounts to be 10.68 per cent during year 2019 to 2010.

Table 4.10: Per cent share of major dry fruits in India's total agricultural import (2010 to 2019)

Fruit name	Per cent share of each fruit in India's total agricultural import based on its value										
	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	Mean
Almond	2.22	2.21	1.98	2.89	2.95	3.31	2.88	2.92	3.79	3.92	2.91
Dreid Apricot	0.07	0.04	0.02	0.07	0.06	0.06	0.03	0.09	0.13	0.08	0.07
Arecanuts	0.20	0.19	0.18	0.07	0.40	0.60	0.21	0.18	0.26	0.18	0.25
Cashewnut	4.36	6.85	4.76	4.42	4.83	5.94	5.02	5.45	8.06	5.25	5.49
Dates	0.92	0.84	0.57	0.97	0.94	0.84	0.88	0.89	1.19	0.76	0.88
Dried fig	0.32	0.24	0.07	0.36	0.32	0.35	0.25	0.37	0.37	0.44	0.31
Pistachio	0.34	0.37	0.27	0.38	0.36	0.49	0.41	0.49	0.75	0.79	0.46
Raisin	0.08	0.05	0.07	0.17	0.21	0.24	0.23	0.28	0.44	0.49	0.23
Walnut	0.00	0.00	0.00	0.01	0.01	0.06	0.08	0.22	0.21	0.23	0.08
Other dry fruits	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.01
Per cent share of total dry fruits	**8.50**	**10.80**	**7.93**	**9.34**	**10.08**	**11.89**	**10.00**	**10.91**	**15.21**	**12.16**	**10.68**

4.1.4 Trends in export and import of major fruits and dry fruits in Afghanistan

In this part of study those fresh and dry fruits are selected which had the major or highest amount of export and import in Afghanistan during the period of 2010 to 2019.

4.1.4.1 Trends in export of major fresh fruits from Afghanistan

The trends in export of major fresh fruits from Afghanistan namely; grape, pomegranate, apple, melon, apricot and watermelon are presented in table 4.11 and figures 4.31 to 4.36. Per cent share of each exported major fruits in Afghanistan's total agricultural export are calculated based on its value of respective exported fresh fruits and presented in table 4.12.

A. Export

Trends in export of major fresh fruits from Afghanistan during the year 2010 to 2019 are presented in table 4.11. Total export of major fresh fruits from Afghanistan was 44,760 tonnes with the overall value of 10,420 lakh INR in year 2010 which increased up to 280,265 tonnes with the overall value of 64,837 lakh INR during the year 2019. Enhancement in value of export of major fresh fruits was recorded by 6.22 times since the year 2010. Grape had the highest export among all major fresh fruits with the average amount of 69,054 tonnes, with a value of 17,795 lakh INR and its average share in Afghanistan's total agricultural export was 5.00 per cent (table 4.12). Whereas watermelon had the lowest average amount of export with 2,218 tonnes with a value of 356 lakh INR and it's percent share in Afghanistan's total agricultural export was 0.12 per cent (table4.12) during 2010 to 2019 (Table 4.11 & 4.12).

B. Compound Annual Growth Rate (CAGR)

Compound annual growth rate of total export of major fresh fruits in quantity as well as in value term were calculated to be 20.13 and 20.06 per cent, respectively. Apricot had the highest annual growth rate of export in both quantity and value which has showed to be 52.94 and 59.58 per cent, respectively. In the term of quantity and in value, the CAGR in export of all major fresh fruits from Afghanistan found to be positive during the period of 2010 to 2019 (Table 4.11).

Table 4.11: Trends in export of major fresh fruits from Afghanistan (2010 to 2019)

Fruit name	2010		2019		Mean		CAGR%		% Change in 2019 over 2010	
	Qty. Tonnes	Value Lakh (INR)	Qty. Tonnes	Value Lakh (INR)	Qty. Tonnes	Value Lakh (INR)	Quantity	Value	Quantity	Value
Grape	16,089	3,133	138,627	29,741	69,054	17,795	24.03	25.24	7.62	8.49
Pomegranate	13,632	3,178	61,081	10,385	19,284	4,315	16.18	12.57	3.48	2.27
Apple	9,366	2,141	22,030	7,192	14,702	4,778	8.93	12.88	1.35	2.36
Melon	3,866	1,288	12,389	1,849	6,180	1,723	12.35	3.69	2.20	0.44
Apricot	392	75	27,447	8,082	9,408	3,544	52.94	59.58	69.02	106.12
Watermelon	133	35	4,415	468	2,218	356	41.94	29.68	32.20	12.46
Other fruits	1,282	570	14,276	7,120	2,270	1,154	27.25	28.73	10.14	11.50
Total	**44,760**	**10,420**	**280,265**	**64,837**	**123,116**	**33,665**	**20.13**	**20.06**	**5.26**	**5.22**

Figure 4.31: Trends in export of grape in Afghanistan (2010 to 2019)

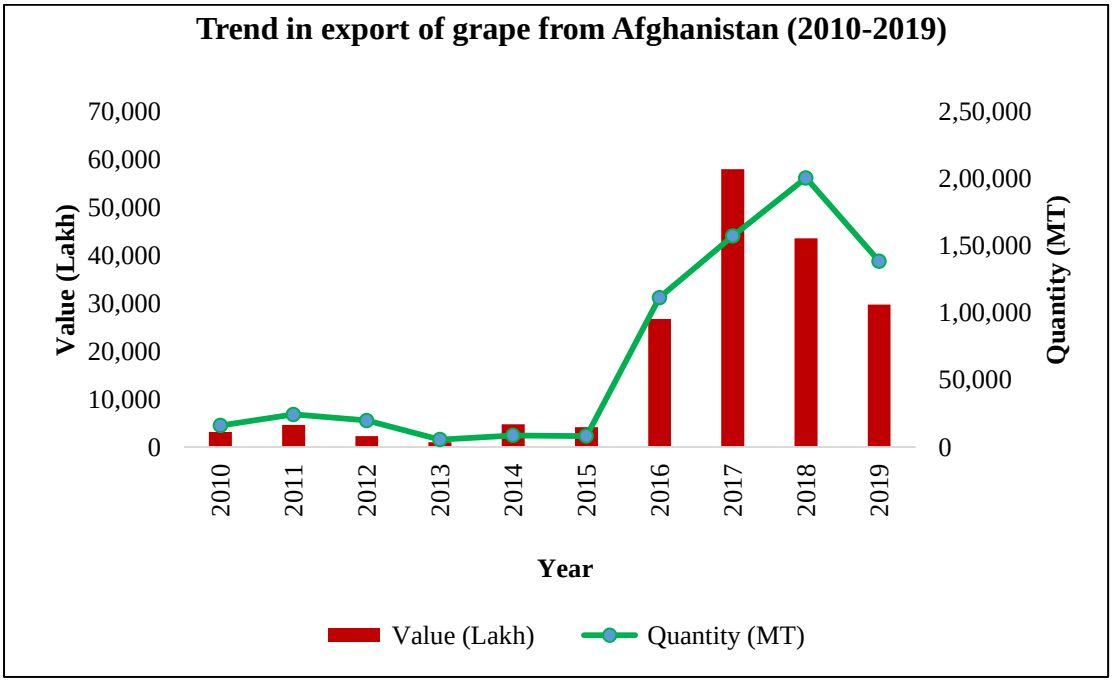


Figure 4.32: Trend in export of pomegranate from Afghanistan (2010-2019)

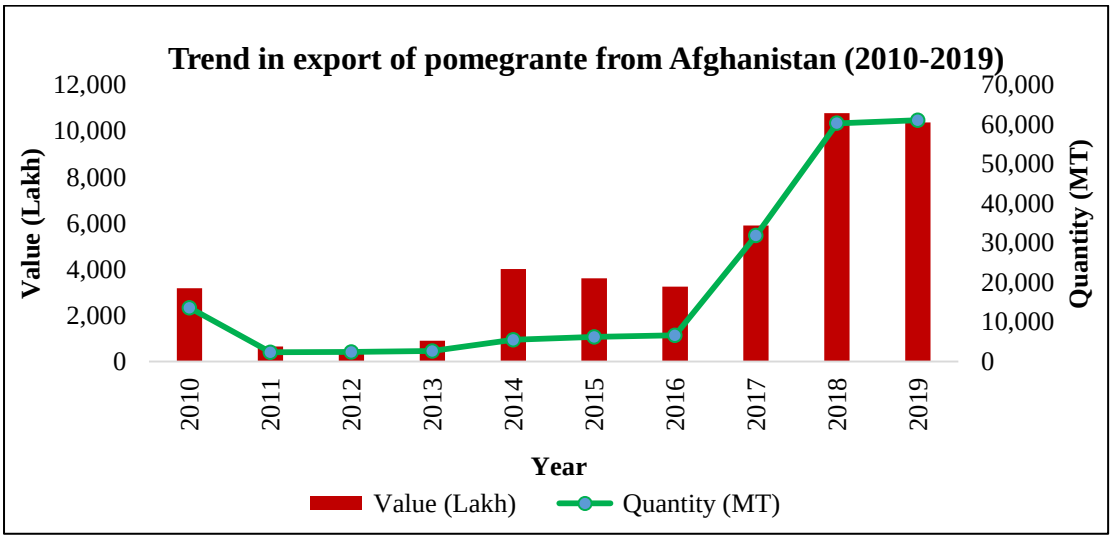


Figure 4.33: Trend in export apple from Afghanistan (2010-2019)

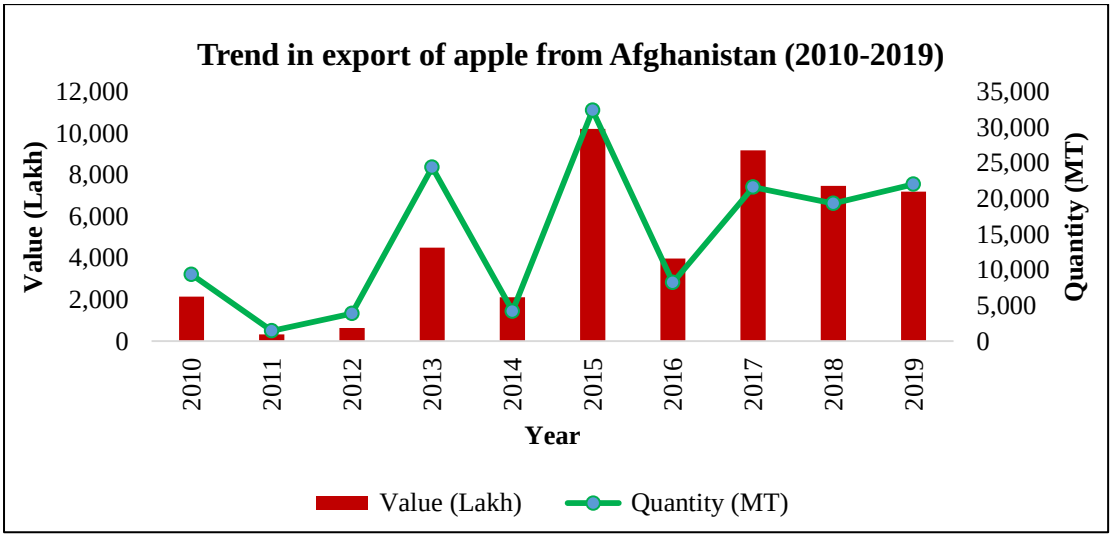


Figure 4.34: Trend in export of melon from Afghanistan (2010-2019)

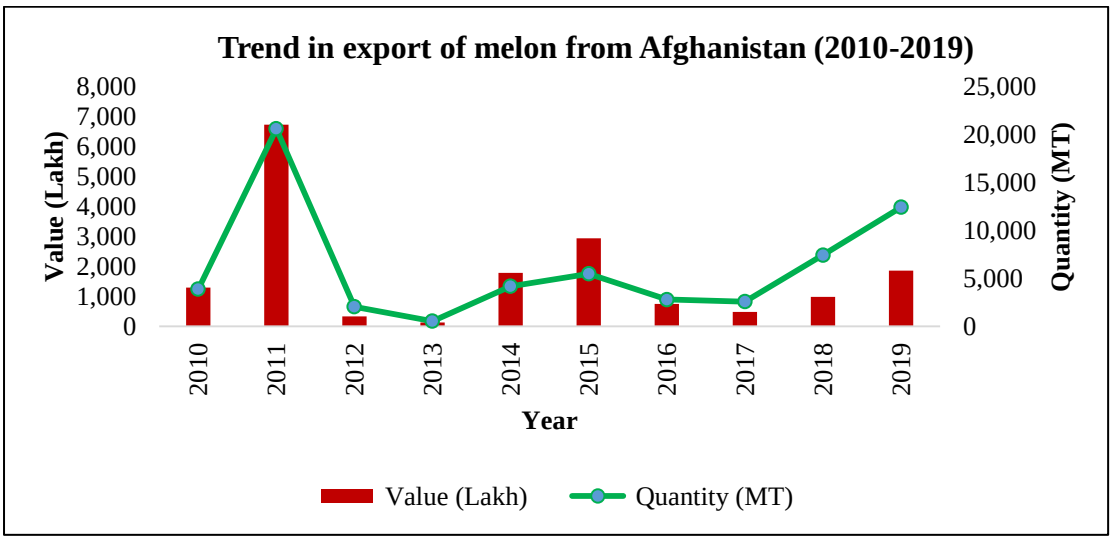


Figure 4.35: Trend in export of apricot from Afghanistan (2010-2019)

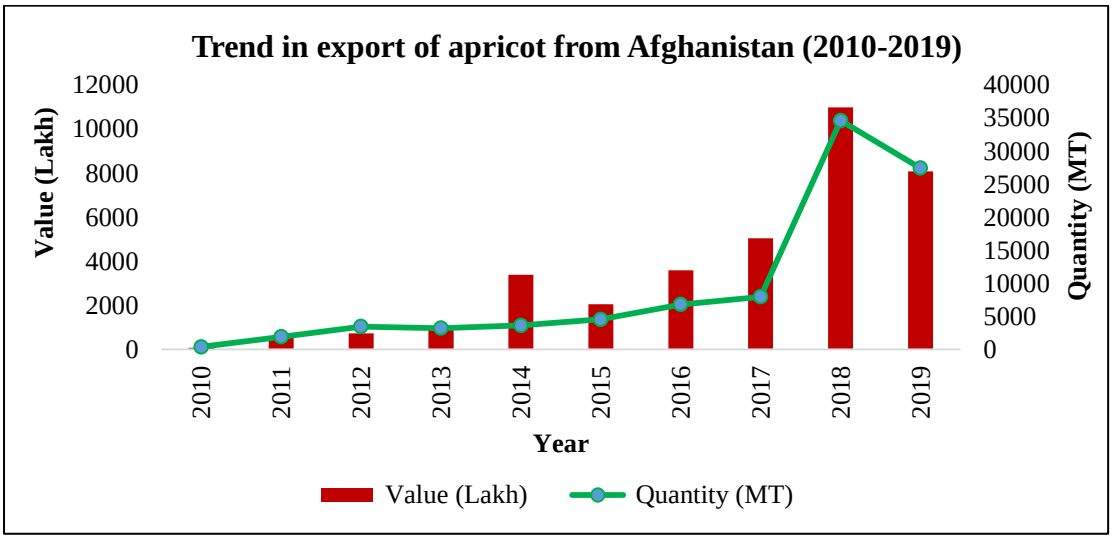
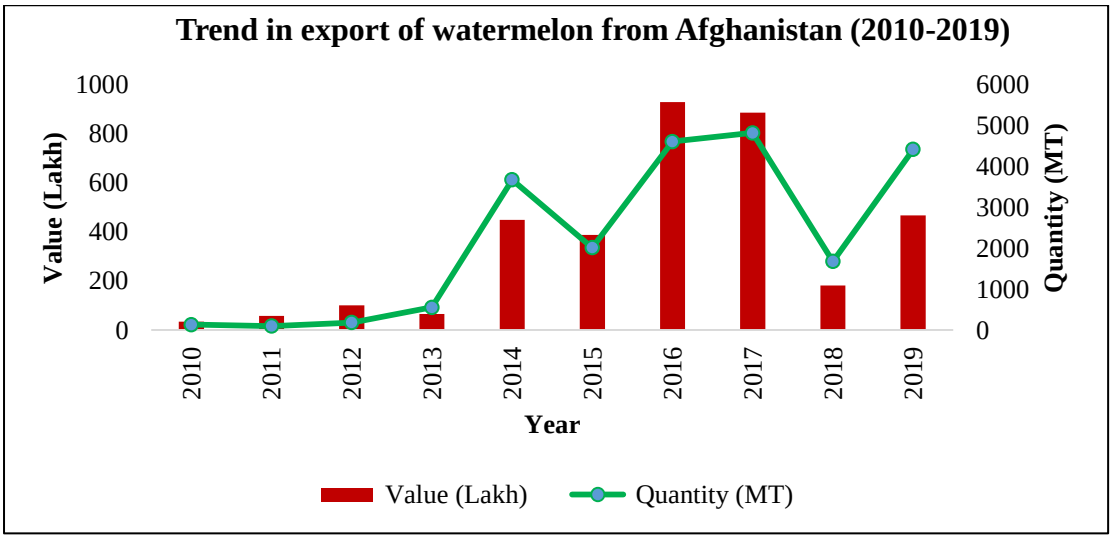


Figure 4.36: Trend in export of watermelon from Afghanistan (2010-2019)



Results of the table 4.11 exhibited that percent change in year 2019 over 2010 for overall export of major fresh fruits from Afghanistan in the term of quantity and value found to be 5.26 and 5.22 percent, respectively. Apricot experienced the highest percent change in year 2019 over 2010 for both in quantity and value which accounts to be 69.02 and 106.12 per cent, respectively.

Per cent share of major fresh fruits in Afghanistan's total agricultural export from year 2010 to 2019 are presented in table 4.12. Lowest and highest share of total fresh fruits export in Afghanistan's total agricultural export was 4.56 and 16.95 per cent in year 2012 and 2017, respectively. While, per cent share of total fresh fruits were found to be 10.59 per cent during 2010 to 2019.

Table 4.12: Per cent share of major fresh fruits in Afghanistan's total agricultural export (2010 to 2019)

Fruit name	Per cent share of each fruit in Afghanistan's total agricultural export based on its value										
	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Mean**
Grape	2.47	3.94	2.03	0.58	1.74	1.60	9.02	12.32	9.85	6.42	5.00
Pomegranate	2.51	0.57	0.39	0.53	1.48	1.40	1.10	1.25	2.44	2.24	1.39
Apple	1.69	0.29	0.57	2.65	0.78	3.95	1.34	1.95	1.69	1.55	1.65
Melon	1.02	5.77	0.29	0.08	0.65	1.13	0.25	0.10	0.22	0.40	0.99
Apricot	0.06	0.46	0.65	0.55	1.25	0.79	1.21	1.07	2.48	1.74	1.03
Watermelon	0.03	0.05	0.09	0.04	0.16	0.15	0.31	0.19	0.04	0.10	0.12
Other fruits	0.45	0.77	0.54	0.28	0.15	0.18	0.13	0.06	0.07	1.54	0.42
Per cent share of total fresh fruits	**8.22**	**11.85**	**4.56**	**4.70**	**6.22**	**9.20**	**13.37**	**16.95**	**16.79**	**14.00**	**10.59**

4.1.4.2 Trends in export of dry fruits from Afghanistan

The trends in export of dry fruits from Afghanistan namely; almond, raisin, pistachio, walnut, dried fig and dried apricot are presented in table 4.13 and figures 4.37 to 4.42. Percent share of each exported dry fruits in Afghanistan's total agricultural export were calculated on the basis of value of respective dry fruits and resented in table 4.14.

A. Export

Trends in export of major dry fruits from Afghanistan from year 2010 to 2019 are presented in table 4.13 and figures 4.37 to 4.42. Total export of dry fruits from Afghanistan was 62,681 tonnes with the overall value of 81,003 lakh INR in during the year 2010 which has increased up to 81,388 tonnes with the overall value of 209,103 lakh INR during the year 2019. Enhancement in value of exported dry fruits were recorded by 2.58 times since the year 2010. Raisin had the highest export among all dry fruits with the average quantity of 33,321 tonnes, with a value of 1,842 lakh INR and its share in Afghanistan's total agricultural export was 17.18 per cent (table 4.14). Whereas, walnut had the lowest average quantity of export with 1,831 tonnes with a value of 3,949 lakh INR and its share in Afghanistan's total agricultural export was 1.69 per cent during the year 2010 to 2019.

Table 4.13: Trends in export of major dry fruits from Afghanistan (2010 to 2019)

Fruit name	2010		2019		Mean		CAGR%		% Change in 2019 over 2010	
	Qty. Tonnes	Value Lakh (INR)	Qty. Tonnes	Value Lakh (INR)	Qty. Tonnes	Value Lakh (INR)	Quantity	Value	Quantity	Value
Almond	15,828	27,181	12,237	31,562	7,844	19,062	-2.54	1.51	-0.23	0.16
Raisin	32,814	24,826	39,381	61,952	33,321	41,842	1.84	9.58	0.20	1.50
Pistachio	1,969	9,100	2,359	20,597	1,793	14,132	1.82	8.51	0.20	1.26
Walnut	3,679	6,530	1,944	5,703	1,831	3,949	-6.18	-1.35	-0.47	-0.13
Dried fig	3,417	4,498	12,070	60,266	6,548	23,179	13.45	29.63	2.53	12.40
Dried apricot	1467	571	9,626	10,890	8,987	8,686	20.70	34.30	5.56	18.08
Other fruits	3,507	8,297	3,771	18,134	2,169	7,326	0.73	8.13	0.08	1.19
Total	**62,681**	**81,003**	**81,388**	**209,103**	**62,494**	**118,176**	**2.65**	**9.95**	**0.30**	**1.58**

B. Compound Annual Growth Rate (CAGR)

Compound annual growth rate of total export of major dry fruits in quantity as well as in value term from Afghanistan were calculated to be 2.65 per cent and 9.95 per cent, respectively (table 4.13). Dried apricot had the highest annual growth rate in export for both quantity and value which has showed to be 20.70 and 34.30 per cent, respectively. In the term of quantity and value, the CAGR in export for all dry fruits found to be positive with the exception of almond (-2.54%, in the term of quantity) and walnut (-6.18% in term of quantity, and -1.35% in term of value), respectively during the study period (Table 4.13).

Figure 4.37: Trend in export of almond from Afghanistan (2010-2019)

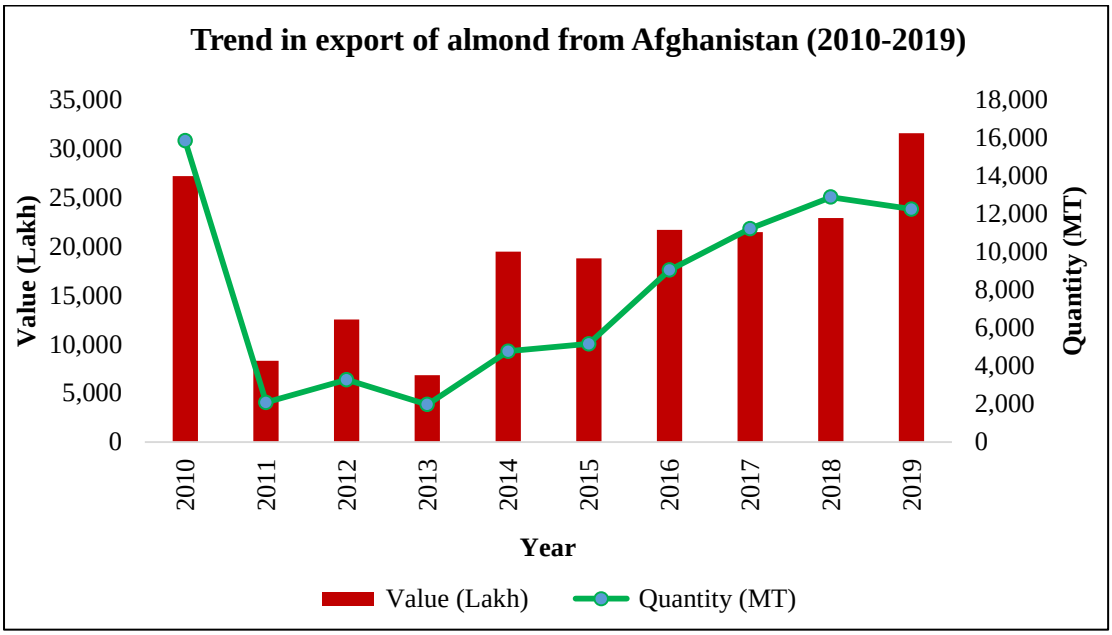


Figure 4.38: Trend in export of raisin from Afghanistan (2010-2019)

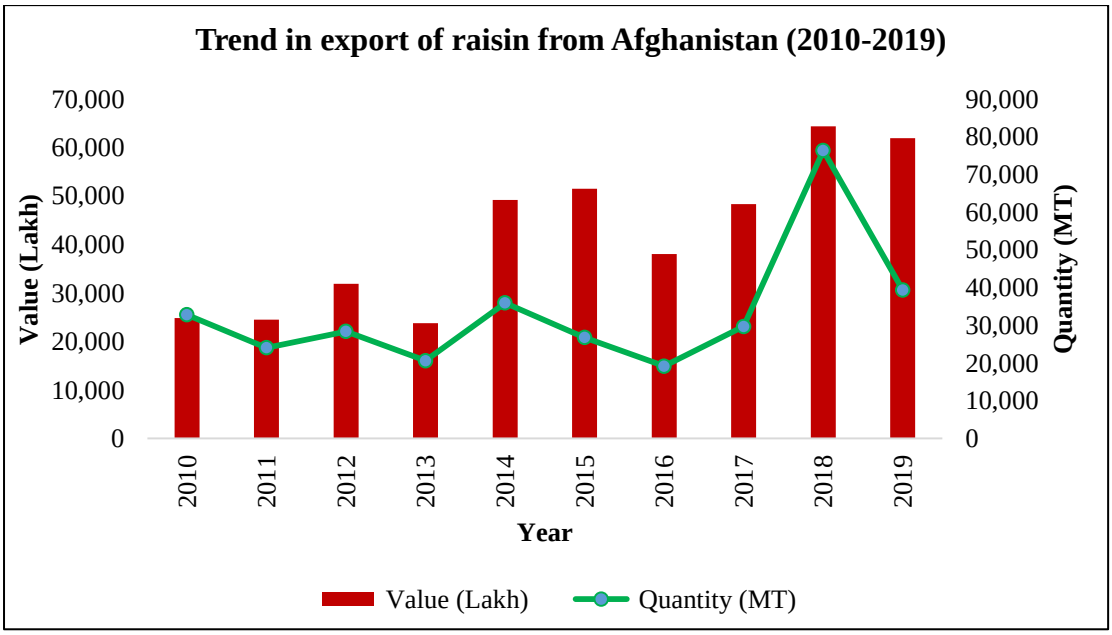


Figure 4.39: Trend in export of pistachio from Afghanistan (2010-2019)

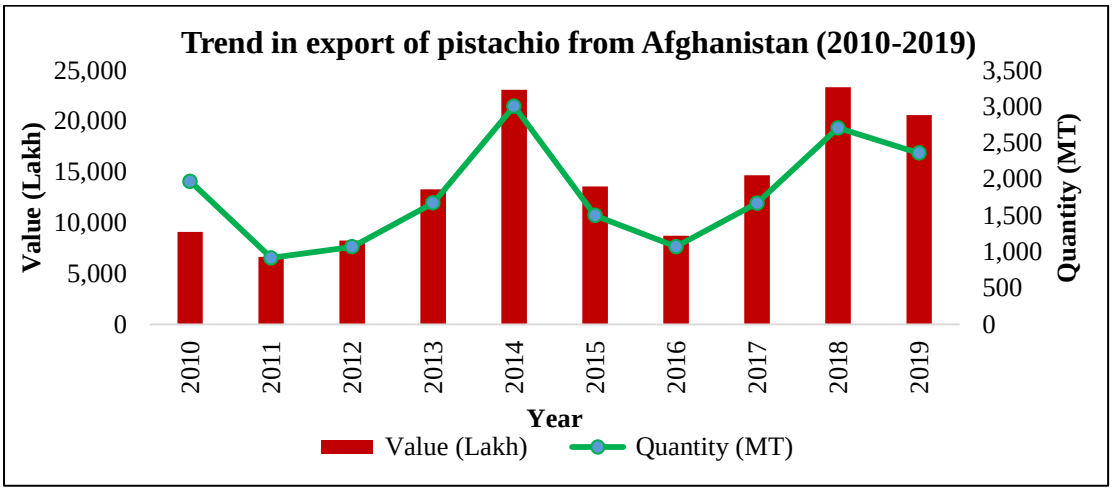


Figure 4.40: Trend in export of walnut from Afghanistan (2010-2019)

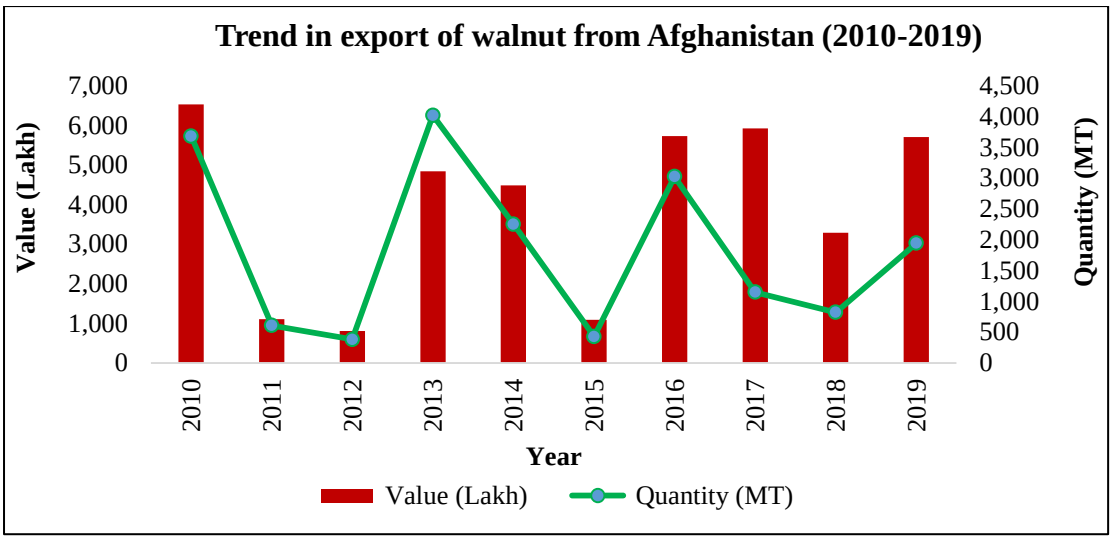


Figure 4.41 Trend in export of dried fig from Afghanistan (2010-2019)

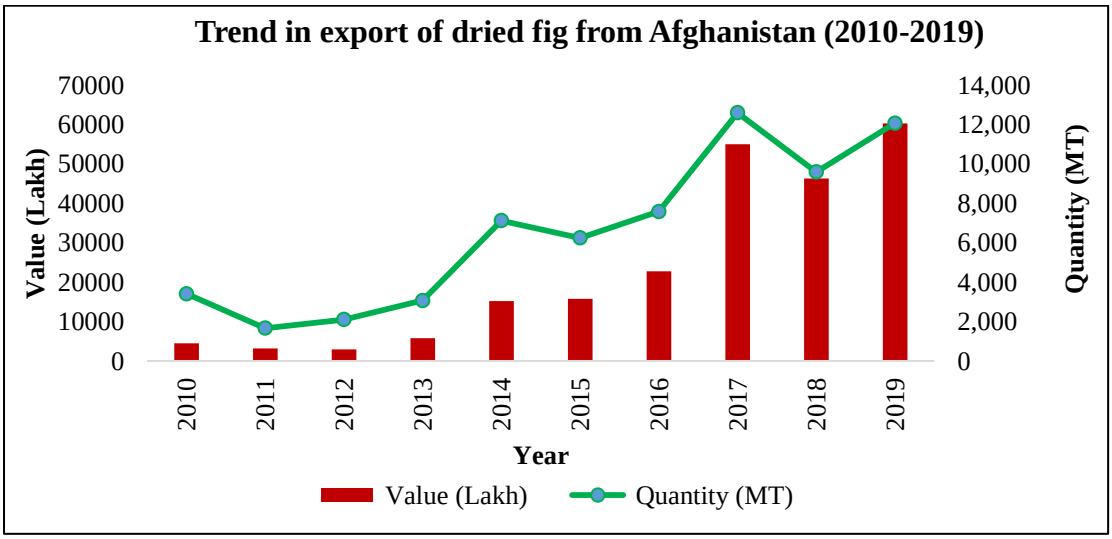
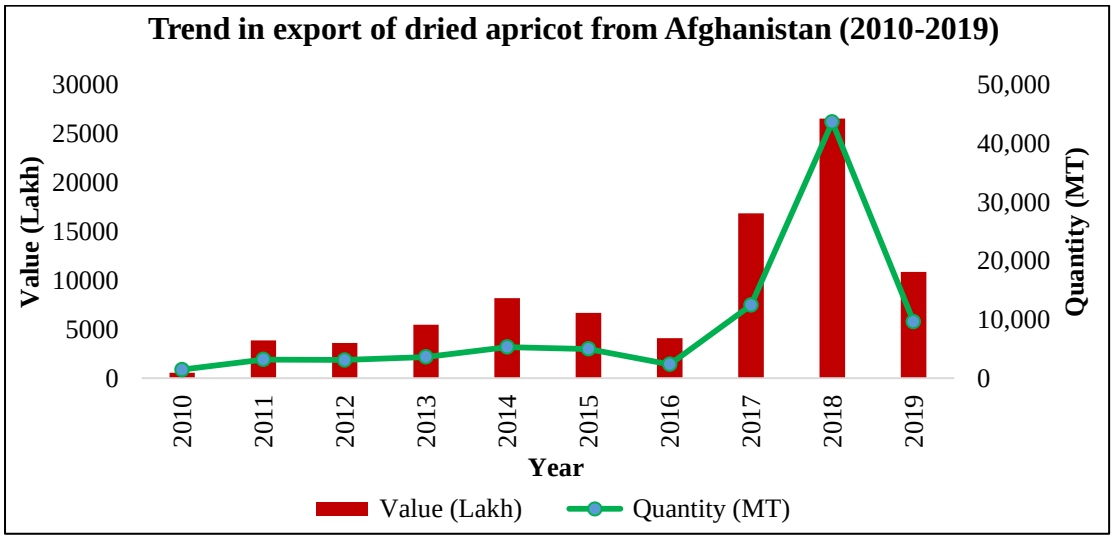


Figure 4.42 Trend in export of dried apricot from Afghanistan (2010-2019)



The results of the table 4.13 exhibited that percent change in year 2019 over 2010 for overall export of dry fruits in the term of quantity and value has showed 0.30 per cent and 1.58 per cent, respectively. Dried apricot experienced the highest percent change in year 2019 over 2010 for both quantity and value which accounts to be 5.56 and 18.08 per cent, respectively.

Percent share of dry fruits in Afghanistan's total agricultural export from year 2010 to 2019 are presented in table 4.14. Lowest and highest share of total dry fruits export in Afghanistan's total agricultural export was 35.13 and 63.93 per cent during the year 2016 and 2010, respectively. Whereas, share of total export of dry fruits were estimated to be 45.16 per cent from year 2010 to 2019.

Table 4.14: Percent share of dry fruits in Afghanistan's total agricultural export (2010 to 2019)

Fruit name	**Per cent share of each fruit in Afghanistan's total agricultural export based on its value**										
	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	Mean
Almond	21.45	7.14	11.08	4.02	7.14	7.25	7.31	4.55	5.18	6.81	8.19
Raisin	19.59	21.05	28.22	13.99	18.05	19.91	12.83	10.26	14.56	13.38	17.18
Pistachio	7.18	5.70	7.30	7.82	8.47	5.25	2.94	3.12	5.28	4.45	5.75
Walnut	5.15	0.95	0.72	2.85	1.65	0.42	1.93	1.26	0.74	1.23	1.69
Dried fig	3.55	2.74	2.64	3.41	5.58	6.10	7.67	11.68	10.47	13.01	6.69
Dried apricot	0.45	3.34	3.19	3.23	3.00	2.59	1.38	3.59	6.01	2.35	2.91
Other fruits	6.55	1.56	1.75	3.18	2.08	2.08	1.07	0.69	4.56	3.92	2.74
Per cent share of total fresh fruits	**63.93**	**42.49**	**54.88**	**38.50**	**45.97**	**43.60**	**35.13**	**35.16**	**46.80**	**45.15**	**45.16**

4.1.4.3 Trends in import of major fresh fruits in Afghanistan

The trends in import of major fresh fruits in Afghanistan viz; apple, banana, kiwi, orange, peach and pineapple are presented in table 4.15 and figures 4.43 to 4.48. Per cent share of each imported fresh fruits in Afghanistan's total agricultural import are calculated based on the basis of value of respective fresh fruits and presented in table 4.16.

A. Import

Trends in import of major fresh fruits in Afghanistan from year 2010 to 2019 are presented in table 4.15 and figures 4.43 to 4.48. Total import of fresh fruits in Afghanistan was 33,199 tonnes with the overall value of 6,493 lakh INR in year 2010 has increased up to 134,921 tonnes with the overall value of 35,673 lakh INR during the year 2019. Enhancement in value imports of major fresh fruits were recorded by 6.49 times since the year 2010. Banana had the highest import among all imported fresh fruits with the average quantity of 80,969 tonnes with a value of 9,369 lakh INR and its share in Afghanistan's total agricultural import was 0.65 per cent (table 4.16). Whereas, peach had lowest average quantity of import with 198 tonnes with a value of 355 lakh INR and its share in Afghanistan's total agricultural import was 0.03 per cent (table 4.16) during the study period.

B. Compound Annual Growth Rate (CAGR)

Compound annual growth rate of total import of major fresh fruits in quantity as well as in value term were calculated to be 15.05 and 18.57 per cent, respectively (table 4.15). Pineapple had the highest compound annual growth rate in the term of quantity which accounts to be 24.76 percent. While, banana reached to the highest compound annual growth rate in the term of value which found to be 34.18 per cent during year 2010 to 2019. In case of quantity as well as in value term, the CAGR in import for all major fresh fruits found to be positive with the exception of apple which accounts to be -1.01 and -3.86 per cent, respectively during the study period (Table 4.15).

Table 4.15: Trends in import of major fresh fruits in Afghanistan (2010 to 2019)

Fruit name	2010		2019		Mean		CAGR (%)		% Change in 2019 over 2010	
	Qty. Tonnes	Value Lakh (INR)	Qty. Tonnes	Value Lakh (INR)	Qty. Tonnes	Value Lakh (INR)	Quantity	Value	Quantity	Value
Apples	10,344	4,455	9,347	3,005	20,857	5,466	-1.01	-3.86	-0.10	-0.33
Bananas	21,303	1,489	118,039	28,157	80,969	9,369	18.67	34.18	4.54	17.91
Kiwi fruit	117	32	760	94	1,352	353	20.58	11.42	5.50	1.95
Oranges	1,105	328	3,897	1,090	3,460	1,275	13.43	12.75	2.53	2.32
Peaches	45	59	274	570	198	355	19.80	25.36	5.09	8.58
Pineapples	90	67	822	939	229	238	24.76	30.27	8.13	13.07
Other fruits	195	63	1,782	1,818	1,564	779	24.76	40.04	8.14	28.01
Total	**33,199**	**6,493**	**134,921**	**35,673**	**108,629**	**17,836**	**15.05**	**18.57**	**3.06**	**4.49**

Figure 4.43: Trend in import of apple in Afghanistan (2010-2019)

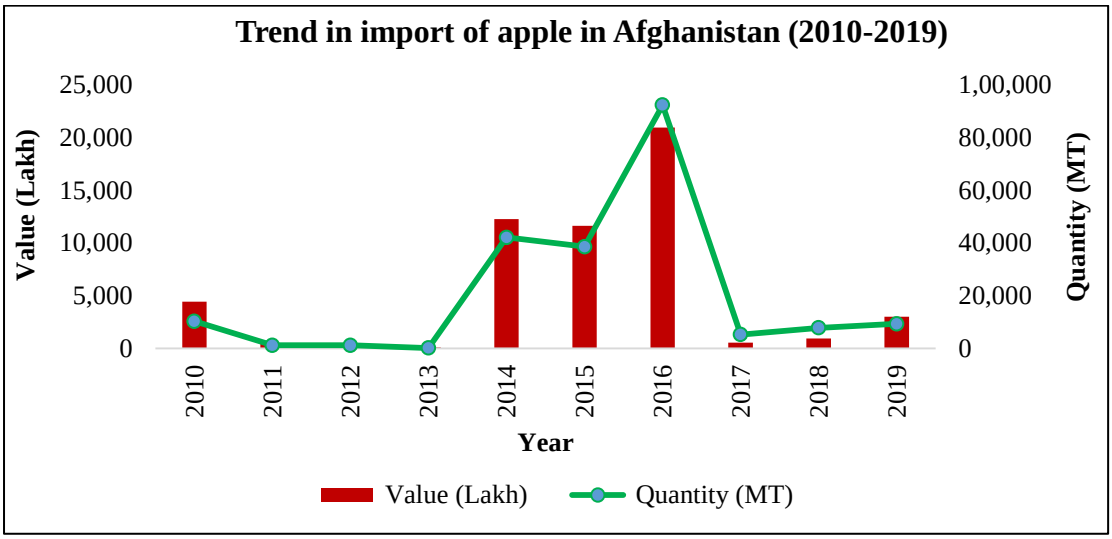


Figure 4.44: Trend in import of banana in Afghanistan (2010-2019)

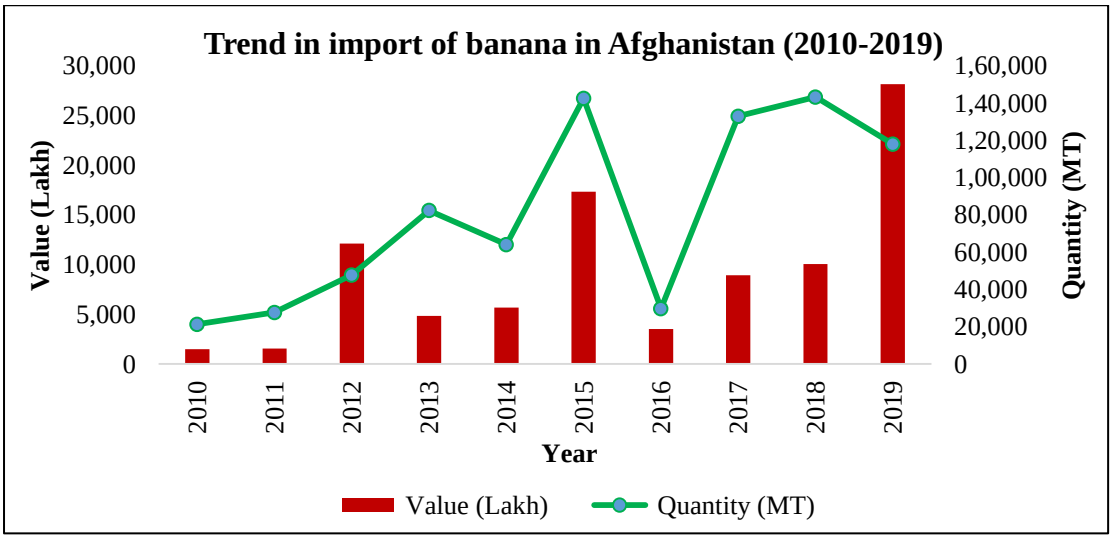


Figure 4.45: Trend in import of kiwi in Afghanistan (2010-2019)

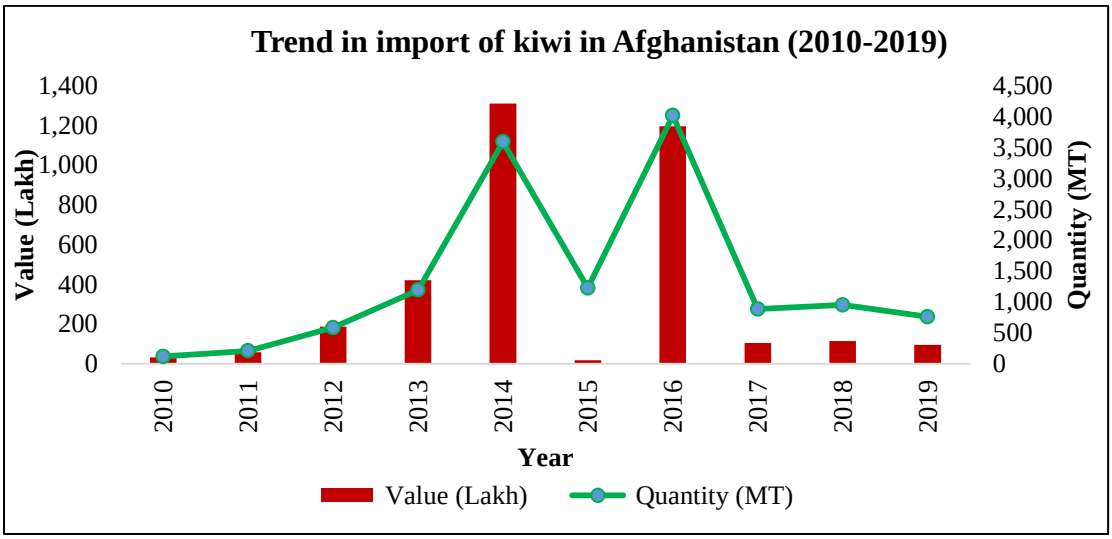


Figure 4.46: Trend in import of orange in Afghanistan (2010-2019)

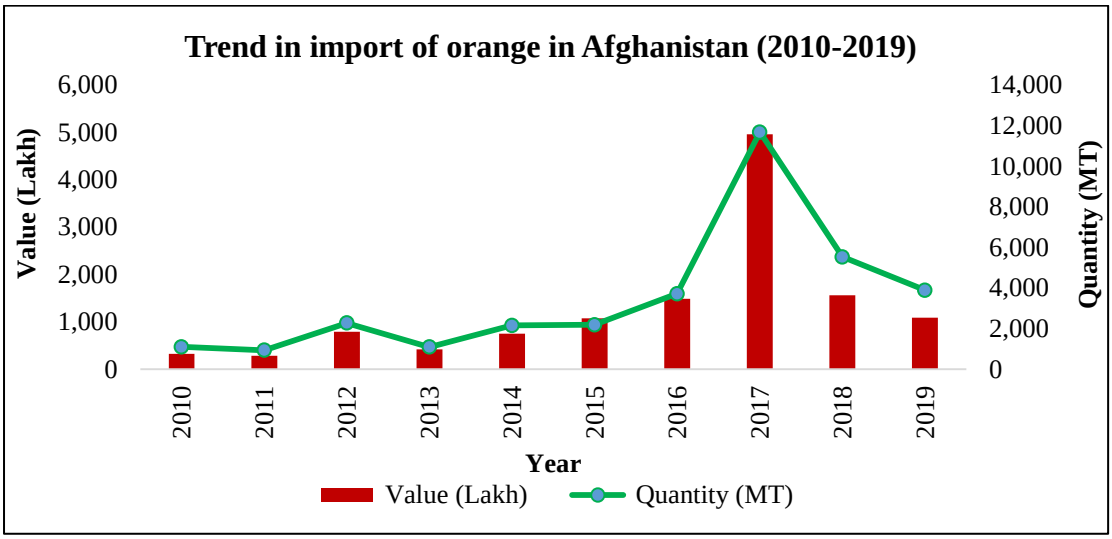


Figure 4.47: Trend in import of peach in Afghanistan (2010-2019)

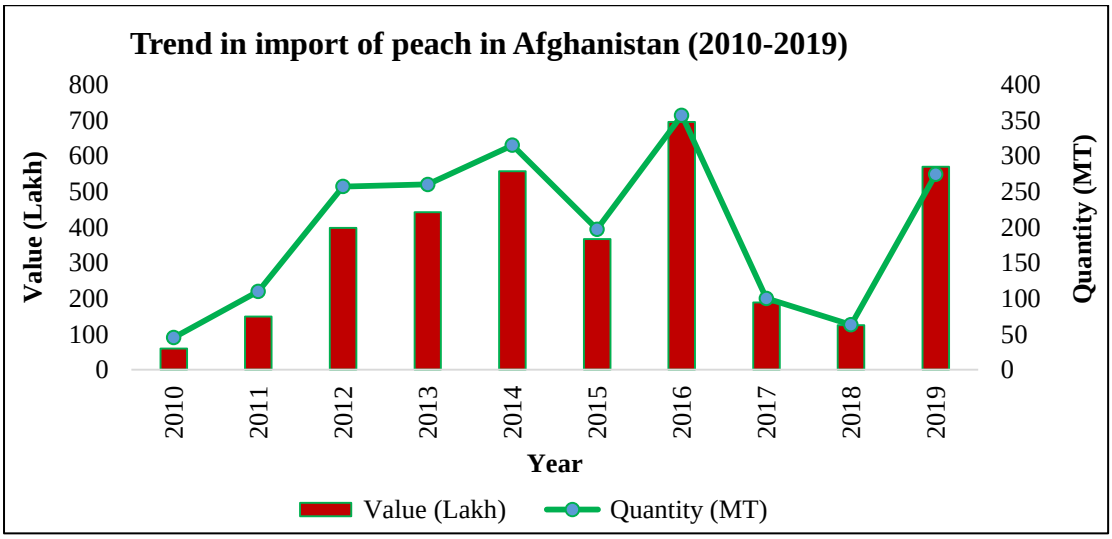
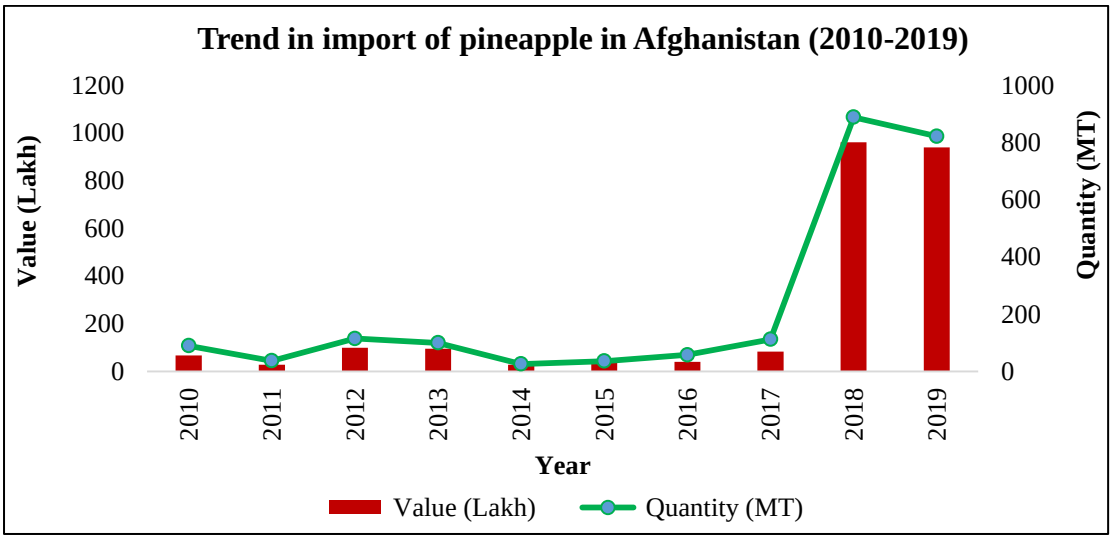


Figure 4.48: Trend in import of pineapple in Afghanistan (2010-2019)



Results of the table 4.15 revealed that percent change in year 2019 over 2010 for overall import of fresh fruits in the term of quantity and value calculated to be 3.06 and 4.49 per cent, respectively. Banana experienced the highest percent change in year 2019 over 2010 based on its value which accounts to be 17.91 per cent. In case of quantity, the highest percent change in year 2019 over 2010 was found for pineapple which was estimated to be 8.13 per cent (Table 4.15).

Percent share of fresh fruits in Afghanistan's total agricultural import from year 2010 to 2019 are presented in table 4.16. Lowest and highest share of total imported fresh fruits in Afghanistan's total agricultural import was 0.35 and 2.27 per cent during the year 2011 and 2015, respectively. While, average share of total import of fresh fruits was accounts to be 1.23 per cent during the period of 2010 to 2019.

Table 4.16: Percent share of major fresh fruits in Afghanistan's total agricultural import (2010 to 2019)

Fruit name	Per cent share of each fruit in Afghanistan's total agricultural import based on its value										
	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**Mean**
Apples	0.80	0.06	0.03	0.01	0.67	0.85	1.24	0.03	0.04	0.16	0.39
Bananas	0.27	0.21	1.45	0.49	0.31	1.26	0.21	0.41	0.45	1.46	0.65
Kiwi fruit	0.01	0.01	0.02	0.04	0.07	0.00	0.07	0.00	0.01	0.00	0.02
Oranges	0.06	0.04	0.09	0.04	0.04	0.08	0.09	0.23	0.07	0.06	0.08
Peaches	0.01	0.02	0.05	0.04	0.03	0.03	0.04	0.01	0.01	0.03	0.03
Pineapples	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.04	0.05	0.01
Other fruits	0.01	0.01	0.02	0.03	0.07	0.05	0.05	0.06	0.06	0.09	0.05
Share % of total fresh fruits	**1.16**	**0.35**	**1.68**	**0.67**	**1.20**	**2.27**	**1.70**	**0.73**	**0.68**	**1.85**	**1.23**

4.1.4.2 Trends in import of dry fruits in Afghanistan

The trends in import of dry fruits in Afghanistan namely; almond, cashewnut, dates, groundnut, pistachio and raisin are presented in table 4.17 and figures 4.49 to 4.54. Percent share of each imported dry fruits in Afghanistan's total agricultural import are calculated based on value of respective dry fruits and presented in table 4.18.

A. Import

Trends in import of dry fruits in Afghanistan from year 2010 to 2019 are presented in table 4.17 and graphically presented in figures 4.49 to 4.54. Total import of dry fruits to Afghanistan was 7,436 tonnes with the overall value of 6,719 lakh INR in year 2010 which has increased up to 33,505 tonnes with the overall value of 58,254 lakh INR during the year 2019. The enhancements in value of imported dry fruits were recorded by 8.66 times since the year 2010. Dates with the average quantity of 11,311 tonnes and pistachio with the average value of 8,562 lakh INR was the main imported fruits among all other dry fruits with the

percent share of 0.38 and 0.59 per cent respectively (table 4.18) in Afghanistan's total agricultural import. Whereas raisin had the lowest average quantity of import with 233 tonnes with a value of 360 lakh INR and its share in Afghanistan's total agricultural import was 0.03 per cent (table 4.18) during the study period.

B. Compound Annual Growth Rate (CAGR)

Compound annual growth rate of total import of major dry fruits in quantity as well as in value term were calculated to be 16.25 and 24.11 per cent, respectively. Groundnut had the highest annual growth rate of import in both quantity and value term which has shown to be 52.96 and 44.66 per cent, respectively. Both quantity and in value terms, the CAGR in import for all dry fruits has found to be positive during the period 2010 to 2019(Table 4.17).

Table 4.17: Trends in import of dry fruits in Afghanistan (2010 to 2019)

Fruit name	2010		2019		Mean		CAGR (%)		% Change in 2019 over 2010	
	Qty. Tonnes	Value Lakh (INR)	Qty. Tonnes	Value Lakh (INR)	Qty. Tonnes	Value Lakh (INR)	Quantity	Value	Quantity	Value
Almond	193	512	5,105	23,258	1,170	4,384	38.75	46.46	25.45	44.41
Cashewnut	110	476	1,795	10,139	739	3,857	32.21	35.79	15.32	20.32
Dates	6,505	3,518	17,850	7,676	11,311	5,440	10.62	8.11	1.74	1.18
Groundnut	100	207	7,009	8,293	1,909	2,101	52.96	44.66	69.09	39.12
Pistachio	441	1,875	1,145	7,710	1,424	8,562	10.01	15.19	1.60	3.11
Raisin	68	105	130	222	233	360	6.69	7.80	0.91	1.12
Other fruits	19	27	471	956	99	174	37.86	42.88	23.79	34.45
Total	**7,436**	**6,719**	**33,505**	**58,254**	**16,883**	**24,878**	**16.25**	**24.11**	**3.51**	**7.67**

Figure 4.49: Trend in import of almond in Afghanistan (2010-2019)

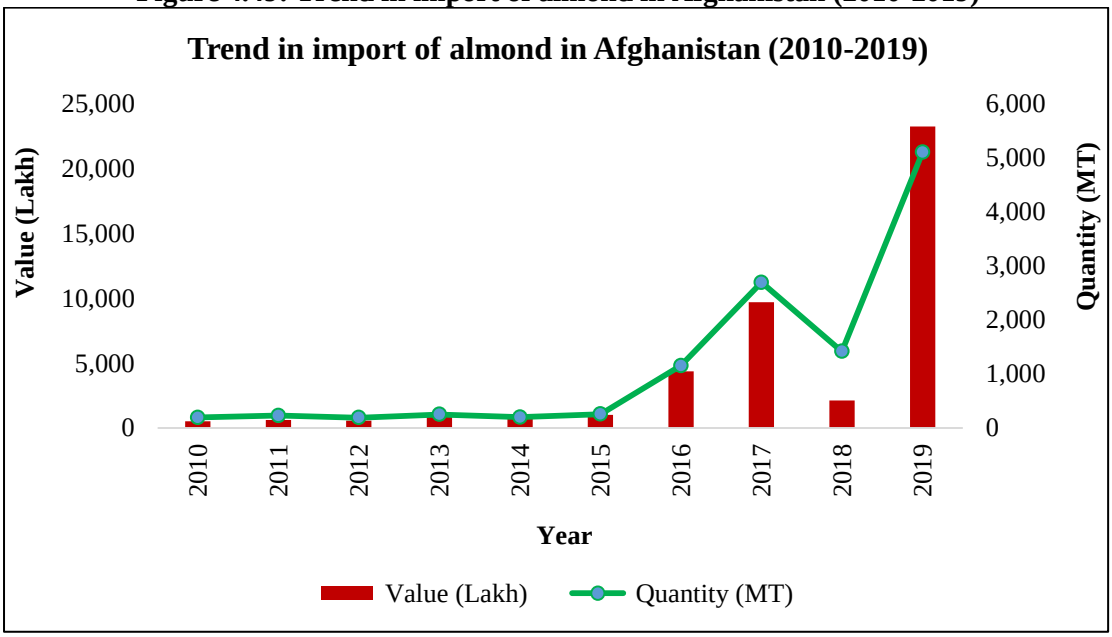


Figure 4.50: Trend in import of cashewnut in Afghanistan (2010-2019)

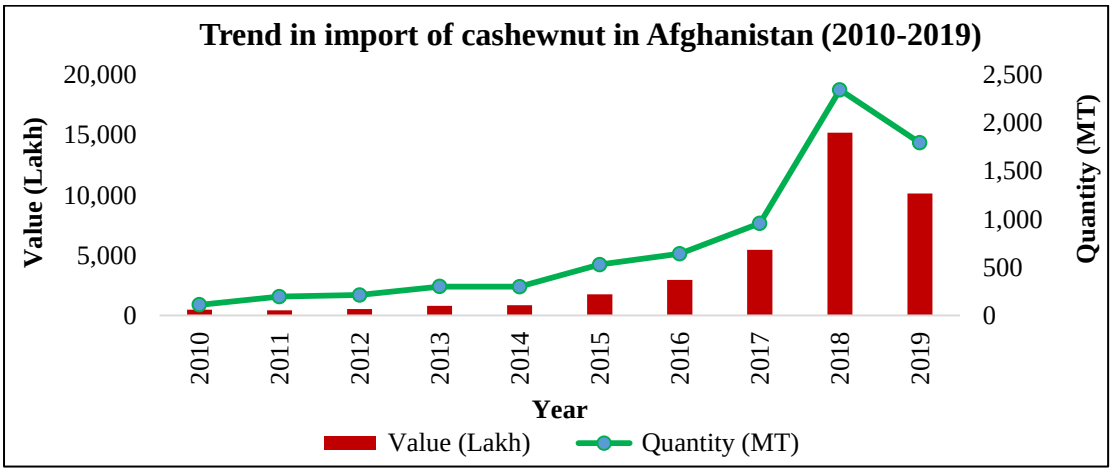


Figure 4.51: Trend in import of dates in Afghanistan (2010-2019)

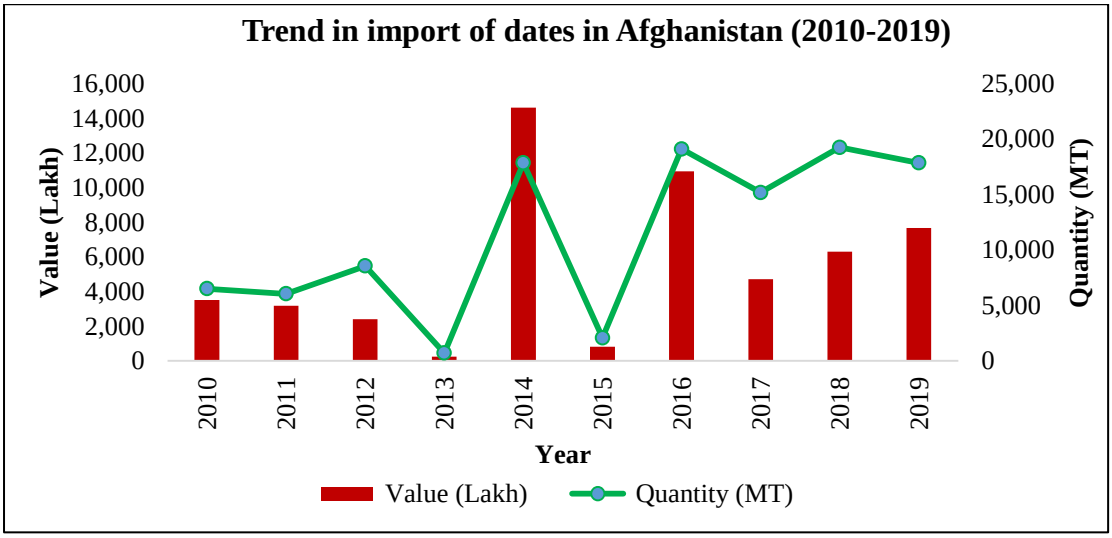


Figure 4.52: Trend in import of groundnut in Afghanistan (2010-2019)

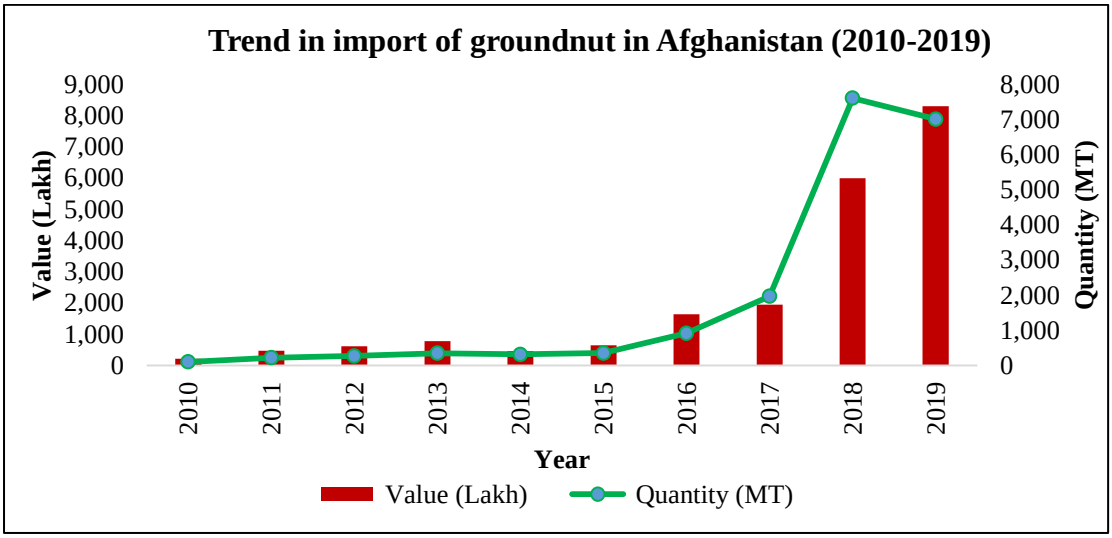


Figure 4.53: Trend in import of pistachio in Afghanistan (2010-2019)

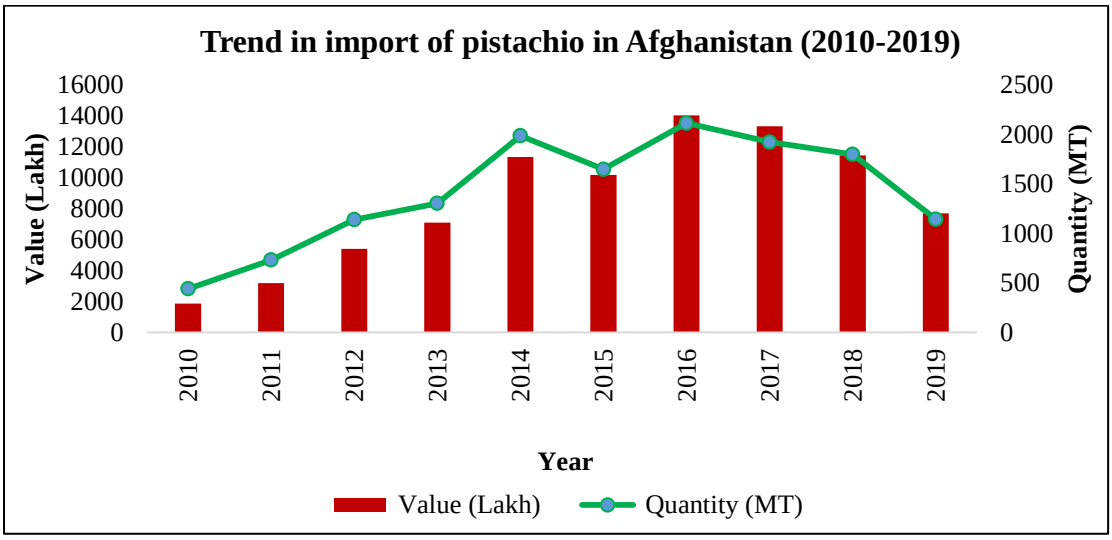
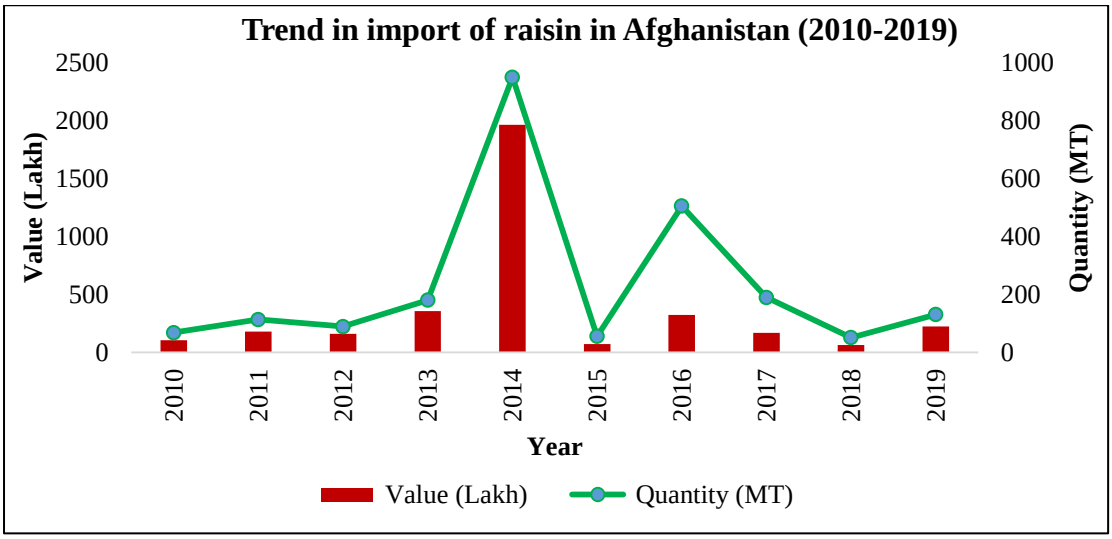


Figure 4.54: Trend in import of raisin in Afghanistan (2010-2019)



The results exhibited that percent change in year 2019 over 2010 for overall import of dry fruits in the term of quantity and value has calculated to be 3.51 and 7.67 per cent, respectively. Groundnut experienced the highest per cent change in quantity during the year 2019 over 2010 which has accounts to be 69.09 per cent. While in term of value, almond found to be highest change i.e. 44.41 per cent during study period. The overall percent change for imported dry fruits showed positive trend in both quantity and value term in year 2019 over 2010. (Table 4.17)

Percent share of dry fruits in Afghanistan's total agricultural import from year 2010 to 2019 are presented in table 4.18. Lowest and highest share of total dry fruits import in Afghanistan's total agricultural import was 1.04 and 3.02 per cent in 2013 and 2019, respectively. While average share of total import of dry fruits was accounts to be 1.57 per cent from 2010 to 2019.

Table 4.18: Per cent share of dry fruits in Afghanistan's total agricultural import (2010 to 2019)

Fruit name	Per cent share of each fruit in Afghanistan's total agricultural import based on its value										
	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	Mean
Almond	0.09	0.08	0.07	0.09	0.04	0.07	0.26	0.44	0.10	1.20	0.25
Cashewnut	0.09	0.06	0.06	0.08	0.05	0.13	0.18	0.25	0.69	0.53	0.21
Dates	0.63	0.43	0.29	0.02	0.80	0.06	0.65	0.22	0.28	0.40	0.38
Groundnut	0.04	0.06	0.07	0.08	0.02	0.05	0.10	0.09	0.27	0.43	0.12
Pistachio	0.34	0.43	0.65	0.72	0.62	0.74	0.83	0.61	0.52	0.40	0.59
Raisin	0.02	0.02	0.02	0.04	0.11	0.01	0.02	0.01	0.00	0.01	0.03
Other fruits	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.05	0.01
Per cent share of total fresh fruits	**1.20**	**1.08**	**1.16**	**1.04**	**1.64**	**1.05**	**2.04**	**1.62**	**1.87**	**3.02**	**1.57**

4.2 Export potential of major fruits and dry fruits in India and Afghanistan

To achieve the export potential, the indices of revealed comparative advantage (RCA) and revealed symmetric comparative advantage (RSCA) have been calculated to look into the comparative advantage of major fruit and dry fruits in India as well as Afghanistan during the period of 2010 to 2019. The RCA ratio compares a country's export share of a certain product to that country's overall export share. If the ratio is greater than one, a country is considered to hold the product's revealed comparative advantage. A disadvantage is implied when the RCA ratio is less than one.

There are no skewness issues with the RSCA value, which ranges between (-1) and (+1). If the equivalent RSCA result is positive for a commodity's export, it is considered to have a comparative advantage, and vice versa.

4.2.1 Export potential of major fruits and dry fruits in India

The indices of RCA and RSCA in the export of major fruits and dry fruits have been calculated to find out the comparative advantage and export potential of fruits and dry fruits in India from year 2010 to 2019. India had a comparative advantage in the export of major fruits and dry fruits for which the RCA value has been found to be more than one and its RSCA has shown a positive value between (+0) and (+1).

4.2.1.1 Export potential of major fruits in India

To look into the export potential of major fruits in India, namely; apple, banana, grape, mango, papaya, orange, pineapple, pomegranate, and watermelon**,** the worth of comparative advantages (RCA and RSCA) is calculated for each mentioned fruit and presented in table 4.19. Detailed information related to data of each major fruit is given in Appendix tables B1 to B9.

The indices of RCA and RSCA in export of major fruits in India from year 2010 to 2019 are presented in table 4.19. Results shows that India had the comparative advantage in the export of grapes in the years 2014, 2016, 2017, 2018 and 2019 with the RCA and RSCA values of 1.11, 1.36, 1.49, 1.4, 1.70, and 0.05, 0.15, 0.20, 0.20 and 0.26, respectively. It indicated that India had the finest export potential in grapes during the above mentioned years. Similarly, Mango had the absolute highest comparative advantage of export among all other major fruits in the years 2010, with RCA and RSCA values of 2.77 and 0.47, respectively. Whereas, pomegranate experienced the negative value of RSCA and had comparative disadvantage in export during the first five years of the study period during the years 2010 to 2014, which has been shown to be (-0.32, -0.23, -0.18, -0.18, and-0.01) respectively. While, it showed a positive value during the last five years of the study (2015 to 2019), which has been shown to be 0.12, 0.08, 0.02, 0.09, and 0.07 respectively, indicated that in the period of the last five years' pomegranate had the finest potential in export. The RSCA for apples, bananas, oranges, and pineapple had a negative export value from years 2010 to 2019 showed that these fruits have a comparative disadvantage in export. However, the comparative advantage indices have witnessed fluctuations over the years during the study period.

Table 4.19: Comparative advantage in export of major fruits in India (2010 to 2019)

Fruits name	Comparative Advantage	Years									
		2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Apple	RCA	0.11	0.09	0.05	0.06	0.03	0.04	0.04	0.02	0.04	0.07
	RSCA	-0.80	-0.83	-0.90	-0.89	-0.94	-0.92	-0.93	-0.96	-0.93	-0.87
Banana	RCA	0.17	0.09	0.10	0.09	0.13	0.24	0.28	0.19	0.21	0.28
	RSCA	-0.71	-0.84	-0.83	-0.83	-0.77	-0.62	-0.56	-0.68	-0.65	-0.56
Grape	RCA	0.90	0.49	0.64	0.81	1.11	0.70	1.36	1.49	1.49	1.70
	RSCA	-0.05	-0.35	-0.22	-0.10	0.05	-0.17	0.15	0.20	0.20	0.26
Mango	RCA	2.77	2.02	1.33	0.80	0.84	0.82	1.17	0.81	0.76	0.75
	RSCA	0.47	0.34	0.14	-0.11	-0.09	-0.10	0.08	-0.11	-0.14	-0.14
Papaya	RCA	1.09	1.13	1.00	0.93	0.91	1.38	1.44	1.18	0.80	0.75
	RSCA	0.04	0.06	0.00	-0.03	-0.05	0.16	0.18	0.08	-0.11	-0.14
Orange	RCA	0.05	0.11	0.10	0.06	0.05	0.08	0.11	0.07	0.04	0.21
	RSCA	-0.91	-0.80	-0.83	-0.90	-0.91	-0.86	-0.80	-0.86	-0.93	-0.66
Pineapple	RCA	0.03	0.03	0.03	0.04	0.06	0.07	0.08	0.11	0.08	0.09
	RSCA	-0.94	-0.94	-0.94	-0.93	-0.88	-0.88	-0.85	-0.81	-0.85	-0.84
Pomegranate	RCA	0.51	0.63	0.70	0.70	0.98	1.28	1.16	1.04	1.19	1.15
	RSCA	-0.32	-0.23	-0.18	-0.18	-0.01	0.12	0.08	0.02	0.09	0.07
Watermelon	RCA	0.13	0.14	0.11	0.14	0.14	0.22	0.23	0.23	0.24	0.24
	RSCA	-0.76	-0.76	-0.80	-0.75	-0.76	-0.64	-0.62	-0.63	-0.61	-0.62

4.2.1.2 Export potential of dry fruits in India

To look into the export potential of dry fruits in India, namely; arecanut, cashewnut, dried fig, raisin, walnut, and peanut, the worth of comparative advantages (RCA and RSCA) for each mentioned fruit is presented in table 4.20. Detailed information related to data of above mentioned dry fruit is presented in Appendix tables B10 to B15.

The indices of RCA and RSCA in export of dry fruits in India from year 2010 to 2019 are presented in table 4.20. results of the table revealed that India had the absolute comparative advantage in the export of cashew nuts and dried figs during the period 2010 to 2019. Cashew nuts found the highest comparative advantage in export in 2010, with the RCA and RSCA values of 2.11 and 0.83, respectively. Whereas, RCA and RSCA values for arecanut, raisin, and walnut fluctuated over the years. While, rest of the dry fruits, had a negative RSCA value indicated that have comparative disadvantage in export from 2010 to 2019. Walnut and peanut had comparative disadvantages in export as the RCA values were less than one and RSCA values were also negative during the years 2010 to 2018. This indicated that both of the dry fruits had the lowest profile of export potential among other dry fruits during the above mentioned period except walnut had the positive value of RSCA in year 2010 and was found to be 0.11, peanut had the positive value of RSCA in 2019, which was found to be 0.02.

Table 4.20: Comparative advantage in export of dry fruits in India (2010 to 2019)

Fruits name	Comparative advantage	Years									
		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Arecanut	RCA	3.91	1.29	0.77	0.50	0.76	1.01	2.44	1.00	0.72	0.81
	RSCA	0.59	0.13	-0.13	-0.34	-0.14	0.01	0.42	0.00	-0.16	-0.10
Cashewnut	RCA	11.11	9.40	6.35	7.96	6.49	6.29	4.89	5.15	4.19	4.33
	RSCA	0.83	0.81	0.73	0.78	0.73	0.73	0.66	0.67	0.61	0.62
Dried fig	RCA	6.06	6.64	1.53	6.15	5.52	8.71	6.91	9.20	7.67	9.90
	RSCA	0.72	0.74	0.21	0.72	0.69	0.79	0.75	0.80	0.77	0.82
Raisin	RCA	0.21	0.28	1.04	0.78	0.48	0.75	1.23	1.00	1.25	1.01
	RSCA	-0.65	-0.56	0.02	-0.12	-0.36	-0.14	0.10	0.00	0.11	0.01
Walnut	RCA	1.24	0.84	0.56	0.67	0.41	0.29	0.16	0.20	0.18	0.10
	RSCA	0.11	-0.09	-0.28	-0.20	-0.42	-0.55	-0.72	-0.67	-0.69	-0.82
Peanut	RCA	0.11	0.22	0.11	0.15	0.34	0.61	0.64	0.97	0.85	1.03
	RSCA	-0.79	-0.63	-0.80	-0.74	-0.49	-0.24	-0.22	-0.01	-0.08	0.02

4.2.2 Export potential of major fruits and dry fruits in Afghanistan

Relative comparative advantage (RCA) and revealed symmetric comparative advantage (RSCA) in the export of major fruits and dry fruits have been calculated to find out the comparative advantage and export potential of fruits and dry fruits in Afghanistan from 2010 to 2019. Afghanistan had potential for the export of those fruits for which the RCA

value has been counted to be more than one and whose RSCA has shown a positive value between (+0) and (+1).

4.2.1.1 Export potential of major fruits in Afghanistan

To look into the export potential of major fruits in Afghanistan, namely; apple, apricot, grape, pomegranate, melon, and watermelon**,** the worth of comparative advantages (RCA and RSCA) was calculated for each mentioned fruit and presented in table 4.21. the detailed information of data related to each major fruit is presented in Appendix tables B16 to B21.

The indices of comparative advantage in Afghanistan's major fruits have witnessed fluctuations trends over the years. The value of comparative advantage (RCA and RSCA) in the export of major fruits has shown that Afghanistan had an absolute comparative advantage in the export of major fruit indicated that Afghanistan had the greatest potential in exports of major fruit. Although negative values of RSCA and RSCA were also found for some fruits viz., apple (-0.30) in 2011, melon (-0.20) and (-0.07) during the year 2013 and 2017, and watermelon (-0.62, -0.28, -0.03, -0.44, -0.52 and -0.12) during the years of 2010, 2011, 2012, 2013, 2018, and 2019 respectively. Apricot had the absolute highest comparative advantage and export potential among all other major fruits during the study period and has reached its RCA value of 71.82 with an RSCA value of 0.97 in year 2018 which was highest comparative advantage among all the major fruits. However, all the major fruits had a positive value or comparative advantage in year 2014, 2015, and 2016 respectively during the study period (Table 4.21).

Table 4.21: Comparative advantage in export of major fruits in Afghanistan (2010 to 2019)

Fruit name	Comparative advantage	Years									
		2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Apple	RCA	2.83	0.53	1.06	4.61	1.45	7.13	2.34	3.53	3.18	3.09
	RSCA	0.48	-0.30	0.03	0.64	0.18	0.75	0.40	0.56	0.52	0.51
Apricot	RCA	1.68	15.12	19.24	14.18	37.81	22.38	36.73	32.67	71.82	51.82
	RSCA	0.25	0.88	0.90	0.87	0.95	0.91	0.95	0.94	0.97	0.96
Grape	RCA	4.32	7.45	3.77	1.03	3.13	2.61	14.81	20.21	16.38	10.41
	RSCA	0.62	0.76	0.58	0.01	0.52	0.45	0.87	0.91	0.88	0.82
Pomegranate	RCA	16.49	3.53	2.41	3.19	9.91	7.38	4.62	4.60	8.99	7.61
	RSCA	0.89	0.56	0.41	0.52	0.82	0.76	0.64	0.64	0.80	0.77
melon	RCA	7.92	55.67	2.72	0.67	5.59	9.14	1.94	0.87	1.96	3.58
	RSCA	0.78	0.96	0.46	-0.20	0.70	0.80	0.32	-0.07	0.32	0.56
watermelon	RCA	0.23	0.56	0.95	0.39	1.51	1.35	2.44	1.57	0.31	0.78
	RSCA	-0.62	-0.28	-0.03	-0.44	0.20	0.15	0.42	0.22	-0.52	-0.12

4.2.1.2 Export potential of dry fruits in Afghanistan

To look into the export potential of dry fruits in Afghanistan, namely almond, pistachio, walnut, raisin, dried fig, and dried apricot**,** the worth of comparative advantages (RCA and RSCA) was calculated for each mentioned dry fruit and presented in table 4.22. Detailed information related to data of each dry fruit is presented in Appendix tables B22 to B27.

The indices of comparative advantage in Afghanistan's dry fruits have had fluctuations over the years, are presented in table 4.21. The value of comparative advantage (RCA and RSCA) in the export of dry fruit has shown that Afghanistan had an absolute comparative advantage in the export of dry fruits indicated, that Afghanistan had the greatest potential for export of dry fruits. Dried fig had the absolute highest comparative advantage and export potential among all other major fruits during the study period and has reached its RCA value of 392.67 with an RSCA value of 0.99 in year 2019. As seen in table 4.22, there is no negative value for both indices of comparative advantage, although for all dry fruits it shows the highest values. This means that Afghanistan had the greatest potential for export of dry fruits during the years 2010 to 2019.

Table 4.22: Comparative advantage in export of dry fruits in Afghanistan (2010 to 2019)

Fruit name	Comparative advantage	Years									
		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Almond	RCA	70.41	23.69	31.48	9.51	15.22	12.26	14.29	9.92	11.21	13.11
	RSCA	0.97	0.92	0.94	0.81	0.88	0.85	0.87	0.82	0.84	0.86
Pistachio	RCA	30.6	29.83	41.86	48.12	34.34	27.18	11.13	12.75	26.13	18.1
	RSCA	0.94	0.94	0.95	0.96	0.94	0.93	0.84	0.85	0.93	0.9
Walnut	RCA	32.28	5.44	3.89	14.37	7.38	1.68	8.36	5.12	3.07	4.67
	RSCA	0.94	0.69	0.59	0.87	0.76	0.25	0.79	0.67	0.51	0.65
Raisin	RCA	125.84	147.38	210.09	109	135.73	161.11	93.58	92.57	129.65	105.02
	RSCA	0.98	0.99	0.99	0.98	0.99	0.99	0.98	0.98	0.98	0.98
Dried Fig	RCA	131.26	137.49	114.71	131.66	165.73	196.08	235.33	322.89	303.95	392.67
	RSCA	0.98	0.99	0.98	0.98	0.99	0.99	0.99	0.99	0.99	0.99
Dried Apricot	RCA	11.38	97.91	111.52	111.21	91.76	80.74	47.24	133.05	236	97.37
	RSCA	0.84	0.98	0.98	0.98	0.98	0.98	0.96	0.99	0.99	0.98

4.3 Constraints in export and import of major fruits and dry fruits in India and Afghanistan

In this part of the study, the major constraints in export and import of major fresh fruits and dry fruits in India and Afghanistan are identified based on various published sources, including latest research papers related to India as well as Afghanistan. In current study, these constraints divided into three categories: first, the major constraints or difficulties that farmers face in producing major fruits and dry

fruits in India and Afghanistan; second, the constraints or difficulties that traders face in trading major fruits and dry fruits in India and Afghanistan; and third, the major factors that limit the producing and export of major fruits and dry fruits in India and Afghanistan.

4.3.1 Constraints in export and import of major fruit and dry fruits in India

Between farmers who grow fruits and vegetables for export and the exporters, there is a strong sense of community. A producer's dilemma, which is a sector that supports exports, is a need. As a result, the challenges faced by exporters, importers, and producers while growing fruits and vegetables are identified and shown as follows.

4.3.1.1 Major problems faced by farmers producing fruits and vegetables in India

Farmers don't express production issues as much as they do facilitative restrictions. Quality goods is crucial overall to satisfy the demands of importing nations. Some of the main constraints and challenges faced by farmers or producers of major fresh and dry fruits are mentioned as bellow.

Failing to fulfill export quality standards

The failure to satisfy the quality standards for export has been cited as a constraint by the fruit and vegetable growers. This is one of the common issues with the export of fruits and vegetables; the importing nations suggest specific quality requirements for each good. Farmers were unable to serve distant markets as a result due to a lack of improved net pricing (Negi & Anand 2015 and Thulasiram 2020).

Insufficient storages and transportation facilities

The second major constraint faced by the producers of fruits is insufficient storages and transportation facilities. as most of the fruits and are perishable and need to transfer to the market on time, but due to poor transit system and lack of transportation most of the fresh fruits are wasted before it reaches from the field to the local market (Baliyan *et al.,* 2022 and Thulasiram 2020).

Dependence on the use of pesticides

Application of pesticides by the farmers needs more money but the situation is aggravated when the farmers have huge dependency on these chemicals. Since the pesticide efficiency does not depend not only on the quality of the chemical but also on the knowledge of the framers about how to use and apply the chemical. These issues related to pesticide make one of the constraints for producing fruits in India (Thulasiram 2020).

Insufficient institutional support

One of the essential components for the development of agriculture is credit. It provides farmers with funds to make new investments and/or embrace cutting-edge technology. Possession of assets and profits is a requirement for obtaining institutional credit,

and these factors are used to evaluate a potential borrower's creditworthiness. Access is prohibited in the absence of such creditworthiness. In this way lack of financial support for the growers leads to the low production of fruits (Thulasiram 2020).

4.3.1.2 Major problems faced by agricultural traders in India

As India have huge trade relation with many countries and export import large amounts of different agricultural commodities especially fresh and dry fruits, while there are some major problems faced by traders which have witness effect on agricultural trade and restrict the export and import of fruits as well. The main problems faced by Agricultural traders during the export and import of fruits in India, are mentioned as bellow.

Poor or Inadequate infra-structure facilities

The main issue facing India's fruit exporters is the lack of adequate infrastructure facilities. According to a report, there are not enough infrastructure facilities, such as controlled atmosphere (CA) containers, quality packing materials, cool chains, and reefer vans, accessible for export (Thulasiram 2020).

Lack of standards for post-harvest processing

Lack of standards for post-harvest processing is another most significant issue. This demonstrates the requirement for procedure standardization and instruction on post-harvest handling as well as controlled and modified atmosphere storage facilities.

Generally, the problems can be divided into "Supply Chain Issues," which are endemic to the domestic food product supply chain, and "Market Access Issues," which are made up of a variety of criteria and elements that are influenced by the needs of the target countries.

Supply Chain Issues

- Inefficient size of operation.
- Variability in supply and quality.
- Inability to compete on price because of regulatory changes, intermediaries, and wastages/losses.
- Insufficient and inappropriate distribution and storage infrastructure.
- The agro-industrial sector lacks technological help.

Market Access Issues

- Non-Trade Barriers: Non-tariff barriers can take many different shapes viz; Import policy restrictions, standards, testing, labelling, and certification requirements, Antidumping and Countervailing Measures, Export subsidies as well as domestic assistance and Public sector contracting.
- Brief product life cycle
- Poor brand image

Above mentioned issues were reported by (Chandra & Kar 2006)

4.3.1.3 Major Factors limiting fruits production and export in India Identifying International Markets

Every product has a value in the marketplaces where it is sold. Due to a robust market and better profitability, the bulk of fruits and vegetables grown in India are exported, or vice versa.

Lack of finance

Due to the necessity for money for domestic purposes, the majority of dry fruit producers sell their harvest in the neighborhood markets. (Baliyan 2022 and Mir & Kottaiveeran. 2014-15)

Lack of storages

In India, where 30 - 40 per cent of annual fruit production is wasted before it reaches the consumer market, just few about (10%) of the cold storage facilities are available for produced fruits (Mir and Kottaiveeran. 2014-15)

Lack of Infrastructure

India's main barrier to exporting fruits and vegetables is a lack of infrastructure, including transportation, power supplies, and highways, dumping sites, packing units, and processing facilities (Baliyan 2022, Balraj 2016 and Mir and Kottaiveeran. 2014-15)

Low profile of government policies

A large portion of the population depends on the horticulture industry, and those individuals need money for labor, fertilizer, pesticides, sprays, transportation costs, packing expenses, etc. It is not feasible for everyone to meet these costs, so as a result, 30–40 percent of production is wasted, and the export share also decreases (Mir and Kottaiveeran. 2014-15).

4.3.2 Constraints in export and import of major fruit and dry fruits in Afghanistan

Afghanistan is a5 land locked country which its economy depends on agricultural trade and have good relationship in trade with other countries especially with India and neighbor countries. When look into the current situations of Afghanistan there are numbers of constraints which have witness effect on agricultural trade and restrict the export and import of fruits as well. The major constraints in export and import of major fruits and dry fruits in Afghanistan are identified in three categories which are mentioned as bellow.

4.3.2.1 Major problems faced by farmers producing fruits in Afghanistan

The major constraints related to the fruits producers and farmers in Afghanistan are observed by Yousufi (2016) and World bank report (june 2017) and mentioned as bellow.

- Lack of appropriate management of water resources
- Lake of infrastructures and cold storages
- Damaged interurban and village roads

- Lack of professional Horticultural structure
- Shortage of farms and research centers
- Nonappearance of Agricultural banks
- Insecure situation in Afghanistan
- Lack of technical staff in agricultural sector
- Lack of awareness among the farmers related to modern gardening methods
- Lack of investment in agriculture sector, especially in Horticulture
- Lack of synergy between farmers and Department of Agriculture

4.3.2.2 The major problems of Agricultural trade in Afghanistan

The main problems faced by exporters and importers of agricultural commodities which it also makes constraints in export and import of major fruits and dry fruits in Afghanistan are identified by (Maley 2010 and Rahimi & Artukoglu 2021) and mentioned as bellow.

Afghanistan's geographical location (Land Lock Country)

Afghanistan is a land lock country. This is a major issue for the traders because it makes the country dependent on its two neighbors, Iran and Pakistan, and it raises the price of shipping export goods to abroad. Major cities and commercial ports are not yet connected by standardized highways. One of the major obstacles to transporting a country's exports is the absence of efficient means of transportation. Better modes of transportation include shipping goods to India via Pakistan, as well as using air, land, and rail transportation as well as refrigerated trucks and working with the exporter on transit projects. One of the major issues that traders face is security organizations taking money from them in the transit ways for a variety of justifications in Afghanistan.

Problem related to marketing services

Problem related to marketing services such as lack of storage facilities, packing and packaging conditions, name and brand of commodities, designing, processing etc. The absence of storage facilities, such as cold storage and contemporary machinery for harvesting from fields and gardens, is the biggest issue affecting Afghanistan's export of goods. Agricultural products can sometimes be transferred to international markets at the proper moment and sold for a profit if they are preserved for a little period of time.

Lack of incentives for investors

Governmental and private banks don't offer incentives for the processing of agricultural products by denying investors small, medium, and large-scale loans at interest-free or low rates of interest. The export of agricultural goods is also severely hampered by the lack of development banks for investors and traders.

Constraints in commercial dealings with neighbors

Another issue facing by traders of agricultural products is the absence of positive working relationships with neighbors and the non-implementation of signed trade agreements and contracts with neighbors and regional nations.

Ongoing civil conflicts and a security crisis

The lack of proper security for the transportation of exported and imported goods to the country's ports is one of the key issues faced by traders. Other significant issues affecting the country's export include the kidnapping of certain traders and theft of traders' products on the highways.

Adoption to the international marketing system

Afghan producers are unable to use conventional or modern marketing strategies to advertise their goods online or internationally. Today, marketing is essential for creating demand and inspiring customers to purchase goods. Due to the absence of an effective worldwide marketing structure, the majority of Afghanistan's exports are not promoted under the name of Afghanistan. One of the major obstacles to the proper marketing of exports is the absence of domestic and international markets, joint sales centers, and national and international fairs, particularly in European and Arab countries.

Problems related to training and communication

One issue affecting the nation's exports is the lack of training workshops for traders and farmers in a variety of areas, including production, harvesting, marketing, tax systems, processing, packaging, storage of products, etc. A significant barrier to the export business is also the ineffective communication between farmers and dealers and between traders and government authorities. Another significant issue in the area of agricultural exports is the lack of awareness of farmer issues.

Poor Mechanism for ensuring the quality of goods and services

Unfortunately, there is no rigorous quality control mechanism in place at the country's customs. As a result, Afghanistan's export goods encounter significant difficulties because they cannot be sold in foreign markets because of the required quality control certificates. From a global standpoint, exporters in Afghanistan have not been able to obtain this document due to absence of authority.

Border security problems

Afghanistan has long border (5,529 kilometers) with neighboring countries, among them the longest border about 2,430 Kilometers with Pakistan. Due to its length, security of border is most challenging (Rahimi & Artukoglu 2021)

Misunderstanding of the free market economy

Due to lack of accountability of governments as well as markets, is biggest barrier for free market economy system as a result exports of fruits as well as dry fruits worse effected.

4.3.2.3 Major Factors limiting fruits production and export in Afghanistan

Since Afghanistan's agricultural sector, especially the horticultural sector, has many problems and challenges in the region of production, export, and import of fresh and dry fruits, there have been some major factors which limiting the production and export of fruits in Afghanistan, which are reported by ministry of industry and commerce of Afghanistan (MOCI.gov.af 2021) these factors mentioned as below.

Low capacity of fruits producers and exporters and lack of awareness about regional and international markets

These problems include from production to export and receiving the desired markets, as bellow

- Fluctuation trends in production of fruits and dry fruits.
- Lack of knowledge among the farmers regarding package and practices of modern techniques of agriculture especially for horticultural crops.
- Non availability of quality seeds/ planting materials.
- Improper post-harvest handling practices.

Lack of warehouses and laboratories

- Lack of warehouses, cold storage and pack houses, may leads to quality deterioration which affects the export of fruits and dry fruits.
- There are lack/absence of quality testing laboratories in Afghanistan, may effects the exports of fruits and dry fruits.
- The problem of highways, roads and connecting routes to the cities for fast transfer of fruits to export.
- Lack of refrigerated containers and road safety problems

Lack of cooperation and support from pertinent departments, as well as breaking legal and regulatory requirements

- Lack of sufficient government support during the fruit production season.
- Non-observance of hygiene and safety in the production, packaging and export of fresh fruits.
- Failure to comply with standards in processing, sorting and packaging according to the demand of national and international markets
- Failure to issue valid certificates according to globally accepted standards and lows
- High fares of air and ground transportation.
- The complexity of business laws that do not meet the conditions of the country, such as the imposition of customs tariffs and the payment of company provisions later from every three months
- Lack of coordination between the private and public sector, especially the fresh fruit sector

Paying attention to the advances in the field of technology and human knowledge in the field of agriculture and methods that lead to improvement and growth agricultural products are used in Afghanistan to a small extent. If from this method and standards in the form be better and better used and practical, as a result, Afghanistan's products will reach more regional and international markets.

Suggestions to overcome the constraints and problems

- A quality control system should be strengthening as per International Standards.
- Integrate all export promotion programmes provided by various Ministries and affiliated organizations.
- Strengthen of food processing in the Agri-Export Zones' (AEZ).
- Encourage laboratories that analyses food to obtain accreditation from global organizations and establish a world-class infrastructure for independent food testing and inspection, especially in areas with a high concentration of exporters.
- Need to create different way of processing grade product specifications based on widely recognized standards.
- Government should help producers and traders of major fruits and dry fruits with the facilities of transportation, warehousing & storing (fruits are more perishable) etc.
- Availability of quality cultivars and seedlings should be ensured and also need to creation of superior genotype bud wood banks and tissue culture for scion multiplication.
- Need to strengthen the skill development/ capacity building of technical personnel as well farmers through various training programmes.
- Bio pesticides and biological control must be applying on fresh fruits with a focus on integrated pest management.
- Need to improve harvesting and post-harvest techniques to lower down post-harvest losses.
- Need to develop effective scientific storage/cold chain facilities at farmer's door step.
- Supply chain needs to be aligned with the requirements of importing countries which require control and monitoring of quality standards of the raw materials and processed products.
- Farmers' producer organization/associations (FPO) should be promoted to improve the bargaining power, price realization and better connectivity with domestic as well as global markets.
- There is need to strong market intelligence system to aid exporters to take rational decisions

CHAPTER-V

DISCUSSION

Major findings and results of study conducted by researcher that are mentioned in previous chapter are discussed in this chapter with reasoning and comparing them with previous researches and empirical evidences. So, for the sake of convenience this chapter is also divided into following sub heads:

5.1 Trends in export and import of major fruits and dry fruits in India and Afghanistan.

5.1.1 Trends in Area, production and productivity of major fresh fruits and dry fruits in India

It was clearly evident from previous chapter's results that total area covered by major fresh and dry fruits in India during the study period 2010 to 2019 indicated that mango and peanut covered maximum area among all major fresh fruits and dry fruits with the total average of 2311 and 5096 thousand hectares, respectively. Whereas, fig had the lowest average of total area about 6 thousand hectares during the study period. Watermelon had the highest compounded annual growth rate in area which has accounts to be 14.1 per cent. While, peanut had the lowest compounded annual growth rate of area which founds to be -2.12 per cent. In case of percentage change in 2019 over 2010, the worth of all area covered by major fresh fruits and dry fruits shown a positive trend except for mango and peanut which calculated (-0.01% and -0.19%) respectively during the study period 2010 to 2019. There has been an increasing trend in the area of fruits due to the fact that cultural methods needed less labour overall, with the exception of when crops were being harvested, that fruit crops could survive years of drought, and that the price of fruit crops was more steady and high than that of annual crops. The maximum area cultivated by mango in India is owing to suitable climatic conditions for growing mango. Uttar Pradesh, Andhra Pradesh, Karnataka, Bihar, Gujarat, and Tamil Nadu are the major producers of mangoes in India (National Horticulture board of India). Similar results were observed by Kusuma (2014).

Similarly, in case of average total production, banana has found to be 29214 thousand metric tonnes which was the highest production among all major fresh fruits and dry fruits. As far as dry fruits, peanut had the highest average of total production of 7443 thousand metric tonnes during the same period. Whereas, mango, orange, papaya and apple came at the second, third, fourth and fifth position with the total average production of 18796, 6946, 5378 and 2285 thousand metric tonnes, respectively. Watermelon had the highest compound annual growth rate in production which has accounts to be 21.05 per cent. While, peanut had the lowest compound annual growth rate which founds to be -2.04 per cent. In the case of percentage change in production during the years 2019 to 2010, all the major fresh fruits and dry fruits shown a positive trend except for walnut (-0.11%) and peanut (-0.19%) during the

study period 2010-2019. As a result of implementing new technology and growing improved varieties, production increased more in major fruits and dry fruits as a result of the yield effect of respective fruits in India. Due to high demand for bananas on the domestic and global markets; two States, Karnataka and Andhra Pradesh which is also known major producer of banana in India planted additional land in bananas which caused the production of banana to increase These findings are in conformity with results of Mittal (2007), Kusuma (2014), and Ahmad *et al.,* (2021) in their studies.

As far as productivity of fresh as well as dry fruits is concerned, papaya had the highest productivity with the total average of 41.6 metric tonnes per hectare during the study period. While, in case of dry fruits, arecanut had highest per hectare productivity with the total average value of 1.5 metric tonnes. While, banana had the second highest productivity with the total average value 35.3 metric tonnes per hectare during the study period. Watermelon, grape and pineapple came in third, fourth and fifth position with the total average of per hectare productivity of 22.8, 18.8 and 16.1 metric tonnes, respectively. Grape had the highest compound annual growth rate in productivity which accounts to be 10.13 per cent. Whereas, walnut had the lowest compound annual growth rate which founds to be -1.30 per cent. In the case of percentage change in productivity during the year 2019 over 2010, the productivity of major fresh fruits and dry fruits shown a positive trend except for banana (-0.20%) and walnut (-0.12%) during the study period from 2010 to 2019. Implementing new technology and growing improved varieties of major fruits and dry fruits may be attributed major factor to cause increase in yield of respective fruits in India. Similar findings were reported by Mittal (2007) and Gogoi *et al.,* (2022) in their studies.

From the previous discussion related to growth rates, it is evident that most major fresh fruits and dry fruits experienced positive growth rates in terms of area production and yield which can also be credited to the implementation of National Horticulture Mission (NHM) which was launched in 2005-06. The primary goals of the NHM are to expand production of all horticultural products as well as to develop horticulture to its fullest extent within the state. The farming activities were more focused on producing food grains before the implementation of NHM. (Singh *et al.,* (2022)

5.1.2 Trends in Area, production and productivity of major fruits and dry fruits in Afghanistan (2010 to 2019)

Likewise, in Afghanistan, grape and almond covered maximum area among all major fresh fruits and dry fruits with the total average of 75.0 and 16.9 thousand hectares, respectively. While, fig had the lowest total average of area which was 1.9 thousand hectares during the years 2010 to 2019. Apple had the highest compound annual growth rate in area which accounts to be 12.4 per cent while pistachio had the lowest compound annual growth rate which founds to be (-0.35%) per cent. In case of percentage change in area in years 2010

to 2019, all the major fresh fruits and dry fruits shown a positive trend except for pistachio which has calculate to be (-0.03%) during the study period. In Afghanistan, the area and production of horticulture crops specially fruits crops increased somewhat after the war as a result of farmers' desire for cash crops with better income and the Afghan government's encouragement of farmers towards legal agriculture as a substitute for poppy, which had high growing crop in some provinces during the war years. These findings are in conformity with results of Rasoly and Chandrasekhar (2018).

In case of total average production of grape has founded to be 754 thousand metric tonnes which was the highest among all major fresh fruits and dry fruits. While, in case of dry fruits, almond had the highest average production of 41 thousand metric tonnes during the same period. Watermelon, melon, apple and pomegranate came at the second, third, fourth and fifth position with the average production of 433, 348, 123 and 101 thousand metric tonnes, respectively. Apple had the highest compound annual growth rate of production which accounts to be 15.38 per cent as Afghanistan has proven favorable climatic conditions for the production of apple trees. In case of percentage change in production during the years 2010 to 2019, almost all major fresh fruits and dry fruits have a positive trend except for almond which has accounts to be (-0.32%), it was due to variations in temperature between January and February which effect almond trees bloomed earlier than usual in January due to warm temperatures, which resulted in limited yield in February due to the frigid temperatures. The above stated results are supported by Sultani *et al.*, (2021).

Whereas, in case of productivity of fresh as well as dry fruits, watermelon had the highest productivity among all major fresh and dry fruits, with the total average of 11.7 metric tonnes per hectare during the study period. Whereas, in case of dry fruits, pistachio had the highest value of productivity (3.6 MT/ha) followed by watermelon, melon had the second highest productivity with the average value of 10.1 metric tonnes per hectare during the study period. Grape, pomegranate and apricot came in third, fourth and fifth position with an average productivity of 9.8, 9.0 and 7.8 metric tonnes per hectare, respectively. Grape had the highest compounded annual growth rate in the case of productivity which accounts to be 6.70 per cent. Pomegranate had the lowest compounded annual growth rate in productivity which found to be -1.06 per cent. In case of percent change in year 2019 over 2010, the total productivity of major fresh fruits and dry fruits showed a positive trend for apple (0.30 %,), fig (0.53 %), pomegranate (5.18%) and walnut (0.12%). While, Apricot (-0.09%), grape (-1.00%), melon (-1.00%), watermelon (-1.00%), almond (-0.74%), and pistachios (-0.74%) has shown negative trend during the study period 2010-2019. Commonly the production and productivity in all fruits had positive result, this was because harmful factors like disease and pests were under control. The plant protection and quarantine department of Agriculture Ministry in Afghanistan has implemented safety precautions and provided farmers with insecticides and pruning equipment which make their production safe.

These results are conformity with Mushair *et al.,* (2020) and Sultani *et al.,* (2021) findings in their respective studies.

Several organizations and projects are active in Afghanistan to support the development of agricultural sector spatially to improve the national horticulture system in Afghanistan viz; Afghanistan National Horticulture Development Organization (ANHDO). Food and Agricultural Organization (FAO), United States Agency for International Development (USAID), National Horticulture and Livestock project (NHLP), Asian Development Bank (ABD) etc. these organizations are helping and support agricultural farmers and producers in various areas such as, providing new agricultural technology to the farmers, creating productive gardens that have more capacity of production, short term and long term training programs for farmers, financial support to the farmers, providing of greenhouses, farm tools, spices and pesticides and various agricultural fertilizers to the farmers. (MAIL.gov.af)

5.1.3 Trends in export and import of major fruits and dry fruits in India

In this part of study those fresh and dry fruits are selected which had the major or highest amount of export and import in India during the period of 2010 to 2019.

5.1.3.1 Trends in export of major fresh fruits in India

The trends in export of major fresh fruits in India namely; apple, banana, grape, mango, papaya, orange pineapple, pomegranate and watermelon presented in the previous chapter. It was clearly evident from the results of the table 4.3 of previous chapter that total export of major fresh fruits from India was 320,768 tonnes with the overall value of 135,866 lakh INR in 2010 which has increased up to 643,705 tonnes with the overall value of 426,274 lakh INR in year 2019. The enhancement in value of major exported fruits was recorded by 3.13 times since 2010 onwards. Grape had the highest export among all major fresh fruits with the average amount of 139,886 tonnes, which a value of 121,497 lakh rupees and 0.63 per cent share in India's total agricultural export. Whereas, pineapple had the lowest average amount of export with 3,674 tonnes with a value of 1,683 lakh rupees and 0.01 per cent share in India's total agricultural export during 2010 to 2019. Highest and lowest share of total fresh fruits export in India's total agricultural export was 2.07 and 0.88 per cent in year 2019 and 2012, respectively. While, average share of total fresh fruits was recorded 1.38 per cent during years 2010 to 2019. Grapes have a bright future as an export in India, the establishment of testing facilities for pesticide residues, which has been a key barrier for export markets, is one reason that may have led to the high level of fruits especially in grape export in recent years. Similar results were obtained by Mukherjee (2012, and Kashish and Dhawan (2017) in their respective studies.

Compound annual growth rate of total export of major fresh fruits in quantity as well as value term were estimated to be 7.21 and 9.18 per cent during year 2010 to 2019,

respectively. Pomegranate had the highest annual growth rate of export in both quantity and value which has shown to be 16.72 and 20.38 per cent, respectively. In the term of quantity, the CAGR for export of all major fresh fruits was found positive except for apple and papaya which are accounts to be (-8.55%) and (-5.27%), respectively. In the term of value, the CAGR for export of all major fruits was also calculated positive with the exception of apple and mango which are accounts to be (-2.82) and (-1.69), respectively. Pomegranate production and then its export over the year has increased due to the introduction of higher-quality varieties and a set of methods, especially in rain-fed areas. The lack of necessary infrastructure facilities in the production areas may be the cause of the decline in the export of various fruits. India was unable to send additional mangoes to the USA, because it was made required to irradiate mangoes before exporting them to the United States. The high positive growth rate in export of Indian fruits indicates a good export potential and higher profit in world market. These findings are in conformity with results of Bisht *et al.,* (2015), kashish and Dhawan (2017) and Singh *et al.,* (2020).

As far as percent share of major fruits in India's total agricultural export from years 2010 to 2019 was concerns, percent change in overall export of major fresh fruits in the term of quantity and value were estimated to be 0.01 and 2.14 percent during the years 2010 to 2019, respectively. Pomegranate experienced the highest percentage change in 2019 over 2010 for both quantity as well as value which has accounts to be 3.69 per cent and 8.85 per cent, respectively. Pomegranate is a crop with excellent export potential, but they only make up a very small portion of all exports in India. Similar results were obtained by Mukherjee and Mukherjee (2012) and Kashish and Dhawan (2017) in their research findings.

5.1.3.2 Trends in export of dry fruits in India

Trends in export of dry fruits in India from year 2010 to 2019 indicated that total export of dry fruits from India was 120,645 tonnes with the overall value of 315,948 lakh INR in year 2010 has increased up to 162,517 tonnes with the overall value of 629,449 lakh rupees during the years 2019. The enhancement in value of exported dry fruits was recorded by 2 times since 2010. Average share of total export of dry fruits was estimated to be 3.29 per cent during 2010 to 2019. Cashewnut had the highest export among all dry fruits with the average amount of 105,640 tonnes, with a value of 469,835 lakh INR and 2.55 per cent share in India's total agricultural export during the study period. Similar trends were observed by Bisht *et al.,* (2015), Mir & Kottaiveeran (2014-15) in their respective studies.

Compound annual growth rate of total export of major dry fruits in quantity as well as value term were estimated to be 3.02 per cent and 7.14 per cent during the year 2010 to 2019, respectively. Peanut had the highest annual growth rate of export in both quantity and value which has recorded 29.23 and 41.11 per cent, respectively. In the term of quantity, the CAGR for export has found positive for dried fig (10.10%), raisin (18.93%) and peanut (29. 23%).

While, in case of arecanut, cashewnut and walnut, it was observed negative *i.e.* -6.24, -1.09 and -13.04 per cent, respectively. In the term of value, the CAGR for export of all dry fruits, were observed positive with the exception of walnut which was accounts to be -11.14 per cent during 2010 to 2019, Because Indian walnut production is mostly restricted to the mountains states of Jammu and Kashmir, Himachal Pradesh, and Uttarakhand, in 2018–19 production of walnut was lower than projected at 34,000 MT (on an in-shell basis) as a result of late precipitation in Kashmir Valley during the flowering months. Similar findings were obtained by Bisht *et al.,* (2015), Mir & Kottaiveeran (2014-15), Sheeba & Reena (2019) and Rabha & Sharma (2021).

Results of table 4.6. exhibited that percent change in year 2019 over 2010 for overall export of dry fruits in the term of quantity and value has showed 0.35 and 0.99 per cent, respectively. Whereas, peanut experienced the highest percentage change in year 2019 over 2010 for both in quantity and value which has accounts to be 11.99 and 30.29 per cent, respectively. Due to the high demand and good price of dry fruits in international market, India exports fruits to over 30 countries based on their requirements, including the United Kingdom, Netherlands, United Arab Emirates, Bangladesh, Germany, Belgium, Saudi Arabia, Oman, Kuwait, Sri Lanka, and Bahrain. India has collated the requirements of EU countries, which has increased export of fruits from India. These findings are in conformity with results of Mir & Kottaiveeran (2014-15) and Sheeba & Reena (2019).

5.1.3.3 Trends in import of major fresh fruits in India

Trends in import of major fresh fruits in India from years 2010 to 2019 are presented in table 4.7. Results of the table revealed that total import of major fresh fruits in India was 129,703 tonnes with the overall value of 59,642 lakh INR in year 2010 which has increased up to 393,764 tonnes with the overall value of 268,410 lakh INR during the year 2019. The enhancement in value of imported fresh fruits were recorded by 4.5 times since 2010. While, average percent share of total fresh fruits was accounts to be 1.54 per cent during 2010 to 2019. Apple had the highest import among all major fresh fruits with the average amount of 215,146 tonnes, with a value of 137,169 lakh INR and its average share in India's total agricultural import was 1.08 per cent. Whereas pomegranate had the lowest average amount of import with 1,122 tonnes with a value of 616 lakh INR and its average per cent share in India's total agricultural import was 0.01 per cent during 2010 to 2019. The results of the current study indicate that both the number and value of imports of various fruits have significantly increased due to the requirement and uses of fruits for both consumption and process by India. Its due to decline in the production or supply of fresh fruits, compared to domestic fruits, imported fruits are of greater quality. Domestic apples might not always be available that's why India import huge quantity of apple and a rise in the demand for apples

of superior quality. Similar findings were obtained by Bisht *et al.,* (2015), Sheeba *et al.,* (2019), Kashish & Dhawan (2017), and Bhat & Bhadur (2018).

Compound annual growth rate of total import of major fresh fruits in quantity as well as value term were estimated to be 11.75 and 16.23 per cent during the year 2010 to 2019, respectively. Kiwi had the highest annual growth rate in import of both quantity and value which has shown to be 35.23 per cent and 34.24 per cent respectively. In the term of quantity, the CAGR in import of all major fresh fruits were found positive except for pomegranate which was accounts to be -18.81 per cent. In the term of value, the CAGR in import of all major fruits was also calculated positive exception for pomegranate which was accounts to be -15.39 per cent during the study period 2010 to 2019. Due to The huge domestic production of pomegranate, there is no need to import high amount of pomegranate to the India. These findings are in conformity with results of Chand *et al.,* (2008) Mir & Kottaiveeran (2016).

Per cent change in 2019 over 2010 for overall import of major fresh fruits in the term of quantity and value has shown to be 2.04 per cent and 3.50 percent, respectively. Kiwi fruit experienced the highest percentage change during the years 2010 to 2019 for both quantity and value which has accounts to be 19.46 per cent and 18.00 per cent, respectively. Similar result was obtained by Mani *et al.,* (2018) in their respective studies.

5.1.3.4 Trends in import of dry fruits in India

Total import of dry fruits in India was 733,165 tonnes with the overall value of 402,857 lakh INR in year 2010 which has increased up to 1,398,458 tonnes with the overall value of 1,857,511 lakh INR during the year 2019. The enhancement in value of imports of dry fruits was recorded by 4.6 times since year of 2010. Average percent share of total dry fruits were accounts to be 10.68 per cent during year 2010 to 2019. Cashewnut had the highest import among all major fresh fruits with the average amount of 796,597 tonnes, with a value of 699,940 lakh INR and its average share in India's total agricultural import was 5.49 per cent. The demand for raw cashew is rising in tandem with the demand for cashew kernel. Over time, less cashew kernels are being exported and more are being imported to satisfy domestic demand. These findings are in conformity with results of Nayak and Paled (2018).

Compound annual growth rate of total import of major dry fruits in quantity as well as value term were calculated to be 6.67 and 16.51 per cent respectively. Walnut had the highest annual growth rate in import of both quantity and value which has shown to be 97.54 per cent and 110.17 per cent respectively. While, CAGR for import of all dry fruits was found positive for both quantity and value during the study period 2010 to 2019. Since the indigenous supply of walnuts has been disturbed, walnut traders in India have begun importing walnuts from the US and Chile. As a result, exporters from the US and Chile have begun shipping walnuts to India in order to meet the country's consumers' high demand for the nut. Similar findings were obtained by Sreevidhya and Elango (2019) in their studies.

Results revealed that per cent change in year 2019 over 2010 for overall import of dry fruits in the term of both quantity and value estimated to be 0.91 and 3.61 percent, respectively. Walnut experienced the highest percentage change in year 2019 over 2010 for both quantity and value which accounts to be 903.63 per cent and 1680.16 per cent, respectively, Whereas, arecanut had the lowest percentage change of quantity (0.10%) and value (1.85%) during 2010 to 2019. Similar trends were observed by Nayak and Paled (2018) and Sreevidhya and Elango (2019), in their respective studies.

5.1.4 Trends in export and import of major fruits and dry fruits in Afghanistan

In this part of study those fresh and dry fruits were selected which had the major or highest amount of export and import in Afghanistan during the period of 2010 to 2019.

5.1.4.1 Trends in export of major fresh fruits in Afghanistan

As per results of the table 4.11 of previous chapter total export of major fresh fruits from Afghanistan was 44,760 tonnes with the overall value of 10,420 lakh INR in year 2010 which has increased up to 280,265 tonnes with the overall value of 64,837 lakh INR during the year 2019. Enhancement in value of export of major fresh fruits was recorded by 6.22 times since the year 2010. While, average share of total fresh fruits was accounts to be 10.59 per cent during 2010 to 2019. Grape had the highest export among all major fresh fruits with the average amount of 69,054 tonnes, with a value of 17,795 lakh INR and its average share in Afghanistan's total agricultural export was 5.00 per cent. Looking to the result, Afghanistan has the high potentiality in export of fresh fruits and witness positive fluctuation over the years. Its due to the high demand for Afghanistan fruits in global market, especially India and central Asian countries. Similar results were observed by Rahimi & Artukoğlu (2019), Hashmi *et al.,* (2020) and Mushair *et al.,* (2020) in their respective studies.

Compound annual growth rate of total export of major fresh fruits in quantity as well as value term were calculated to be 20.13 and 20.06 per cent, respectively. Apricot had the highest annual growth rate of export in both quantity and value which has shown to be 52.94 and 59.58 per cent, respectively. In the term of quantity and value, the CAGR in export of all major fresh fruits from Afghanistan was found to be positive during the period 2010 to 2019. Afghanistan produce several verities of apricots, Amiri apricot is one of the popular variety which has high demand in international market. The Amiri apricot has a long shelf life and can withstand shipping and transportation while maintaining its firmness and flavor for up to a week without refrigeration, making the variety a top export crop. Similar findings were obtained by Kumar & Jan (2017), Godara & Sial (2019), Rahimi & Artukoğlu (2019).

Results of the table exhibited that percent change in 2019 over 2010 for overall export of major fresh fruits from Afghanistan in the term of quantity and value has found to be 5.26 and 5.22 percent, respectively. Due to the high export over the years Apricot experienced the highest percentage change in 2019 over 2010 for both quantity and value

which has accounts to be 69.02 and 106.12 per cent respectively. Similar result was observed by Mushair *et al.,* (2020) in their studies.

ual growth rate of total export of major dry fruits in quantity as well as value term were calculated to be 2.65 per cent and 9.95 per cent, respectively. Dried apricot had the highest annual growth rate of export in both quantity and value which has shown to be 20.70 and 34.30 per cent, respectively. In the term of both quantity and value, the CAGR in export for all dry fruits has found to be positive with the exception of almond and walnut which accounts to be (-2.54%, in the term of quantity) and (-6.18%, -1.35%) respectively during the period 2010 to 2019. The results of the table exhibited that percentage change in 2019 over 2010 for overall export of dry fruits in the term of quantity and value has shown to be 0.30 per cent and 1.58 per cent respectively. Dried apricot experienced the highest percentage change in 2019 over 2010 for both quantity and value which has accounts to be 5.56 per cent and 18.08 per cent respectively. Due to the better quality of Afghanistan dry fruits has made it demand more in the foreign markets. Also the government of Afghanistan recently provided a batter foundation to export Afghanistan's dry fruits to the different countries by land and air, While the high domestic consumption of walnut and Almond has caused the export to decrease. These results are conformity with with the results of Rasoly & Chandrashekar (2018), Rahimi & Artukoğlu (2019), Mushair *et al.,* (2020) and Sultani *et al.,* (2021).

5.1.4.3 Trends in import of major fresh fruits in Afghanistan

Total import of fresh fruits in Afghanistan was 33,199 tonnes with the overall value of 6,493 lakh INR in year 2010 which has increased up to 134,921 tonnes with the overall value of 35,673 lakh INR during the year 2019. Enhancement in value imports of major fresh fruits were recorded by 6.49 times since the year 2010. While, average share of total import of fresh fruits was accounts to be 1.23 per cent during the period of 2010 to 2019. Banana had the highest import among all imported fresh fruits with the average amount of 80,969 tonnes with a value of 9,369 lakh INR and its average share in Afghanistan's total agricultural import was 11.28 per cent during the study period.

Compound annual growth rate of total import of major fresh fruits in quantity as well as value term were calculated to be 15.05 and 18.57 per cent, respectively. Pineapple had the highest compound annual growth rate in the term of quantity which accounts to be 24.76 percent. While, banana reached to the highest compound annual growth rate in the term of value which has found to be 34.18 per cent during 2010 to 2019. In the term of both quantity as well as in value term, the CAGR in import for all major fresh fruits has found to be positive with the exception of apple which accounts to be (-1.01%) and (-3.86%) respectively during the period 2010 to 2019. Since Afghanistan does not have the banana production, there is need to import large amount of bananas from Pakistan, China and India to fulfil the demand and need of consumption of domestic market in Afghanistan and it has caused the

annual growth rate of banana import to increase. In others side the annual growth rate of apple import has decrease due to the high domestic production and good quality of apple in Afghanistan meet the requirement of domestic market. Similar finding was observed by Kumar & Jan (2017) and Rasoly & Chandrashekar (2018) in their respective studies.

Results of the table 4.15 revealed that percentage change in 2019 over 2010 for overall import of fresh fruits in the term of quantity and value has calculated to be 3.06 and 4.49 per cent, respectively. Banana experienced the highest percentage change in 2019 over 2010 based on its value which has accounts to be 11.28 per cent. In case of quantity, the highest percentage change in 2019 over 2010 was found for pineapple which has estimated to be 17.91 percent. In the past years, Afghanistan had import the small amount of pineapple from Iran and China but after the opening of Chabahar fort in 2016, which connected Afghanistan with south Asian countries, the import of fruits from India and Nepal has increased, especially pineapple and banana had comparable import including other fruits. Similar trends were observed by Rasoly & Chandrashekar (2018) in their respective studies.

5.1.4.2 Trends in import of dry fruits in Afghanistan

Total import of dry fruits to Afghanistan was 7,436 tonnes with the overall value of 6,719 lakh INR in year 2010 which has increased up to 33,505 tonnes with the overall value of 58,254 lakh INR during the year 2019. The enhancements in value of imported dry fruits were recorded by 8.66 times since the year 2010. The average share of total import of dry fruits was accounts to be 1.57 per cent during 2010 to 2019. Dates with the average quantity of 11,311 tonnes and pistachio with the average value of 8,562 lakh INR was the main imported fruits among all other dry fruits. These findings are conformity with the results of Rahimi & Artukoğlu (2019), Hashmi *et all* (2020) and Mushair *et all* (2020).

Compound annual growth rate of total import of major dry fruits in quantity as well as value term were calculated to be 16.25 per cent and 24.11 per cent respectively. Groundnut had the highest annual growth rate of import in both quantity and value term which has shown to be 52.96 and 44.66 per cent, respectively. Both quantity and value terms, the CAGR in import for all dry fruits has found to be positive during the period 2010 to 2019. There are many different ways to consume groundnut around the world, most of which are traditional foods. In addition to oil seed, groundnuts are frequently used in Afghanistan to make soups, sweets, roasted peanuts, confections, and extenders for meat products.

Percent share of dry fruits in Afghanistan's total agricultural import from year 2010 to 2019 are presented in table 4.18. The results exhibited that percentage change in year 2019 over 2010 for overall import of dry fruits in the term of quantity and value has calculated to be 3.51 and 7.67 per cent, respectively. Groundnut experienced the highest percentage change in quantity during the year 2019 over 2010 which has accounts to be 69.09 per cent. While in term of value, almond found to be highest growth i.e. 44.41 per cent during study period. The

overall percentage change for imported dry fruits shown positive trend in both quantity and value term during in 2019 over 2010. Due to good quality, Afghanistan dry fruits have high price compared to the imported dry fruits. According this the demand for imported dry fruits has increased over the years and it has caused Afghanistan to import more dry fruits in recent years. Similar results were obtained by Rahimi & Artukoğlu (2019), Hashmi *et al.,* (2020) and Mushair *et al.,* (2020) in their respective studies.

5.2 Export potential of major fresh fruits and dry fruits in India as well as Afghanistan

5.2.1 Export potential of major fruits in India

As per results of the table of 4.19 in previous chapter related to the export potential of major fruits in India revealed that India had the comparative advantage in the export of grapes in the years 2014, 2016, 2017, 2018 and 2019 with the RCA and RSCA values of 1.11, 1.36, 1.49, 1.4, 1.70, and 0.05, 0.15, 0.20, 0.20 and 0.26, respectively. It indicated that India had the finest export potential in grapes during the above mentioned years. Similarly, Mango had the absolute highest comparative advantage of export among all other major fruits in the years 2010, with RCA and RSCA values of 2.77 and 0.47, respectively. Whereas, pomegranate experienced the positive value during the last five years of the study (2015 to 2019), indicated that in the period of the last five years' pomegranate had the finest potential in export. The RSCA for apples, bananas, oranges, and pineapple had a negative export value from years 2010 to 2019 showed that these fruits have a comparative disadvantage in export. However, the comparative advantage indices have witnessed fluctuations over the years during the study period. In the Asian market, grape have a substantially stronger comparative advantage when compared to the worldwide market. Mangoes in both the Asian and international markets, offer a comparative advantage. Despite this, it has a significant comparative advantage on the world market. It's because India must contend with fierce rivalry from its neighbours for the Asian market for its grapes and mangoes. India can obtain high export potential of fresh fruits in future, if regular training programmes apply for farmers on pre and post harvest requirements specially of those fresh fruits in which India had the finest comparative advantage in export (grape, mango, pomegranate and papaya) during the study period. Similar results founded by Bhattacharyya (2012), Balamurugan (2013), Ushunde *et al.,* (2016), Bhatia *et al.,* (2021) and Naseri & Zaka (2021) in their respective studies.

5.2.2 Export potential of dry fruits in India

Results of the table 4.20. revealed that India had the absolute comparative advantage in the export of cashew nuts and dried figs during the period 2010 to 2019. Cashew nuts found the highest comparative advantage in export in 2010, with the RCA and RSCA values of 2.11 and 0.83, respectively. Whereas, RCA and RSCA values for arecanut, raisin, and walnut fluctuated over the years. While, rest of the dry fruits, had a negative RSCA value indicated that have comparative disadvantage in export from 2010 to 2019. Walnut and

peanut had comparative disadvantages in export as the RCA values were less than ne and RSCA values were also negative during the years 2010 to 2018. This indicated that both of the dry fruits had the lowest export potential during the above mentioned period. Due to the government's coordinated efforts, which included offering cashew producer's incentives in the form of export-graded varieties of cashew and infrastructure facilities to export the cashew, the country enjoyed a comparative advantage in the export of cashewnut. In other side, India have comparative disadvantage in export of walnut due to the low potentiality in production and its very small share in India's total Agricultural export. Focus on quality standards at global level specially in which India have relative comparative advantage and providing improved infrastructure facilities can help India to obtain high export potential of dry fruits in future. These results are conformity with findings of Guledgudda *et al.,* (2014), Singh *et al.,* (2020), Ahmad *et al.,* (2021) and Bhatia *et al.,* (2021) of their respective studies.

5.2.3 Export potential of major fruits in Afghanistan

The positive values of comparative advantages (RCA and RSCA) in the export of major fruits from Afghanistan has indicated that Afghanistan had the greatest potential in exports of major fruit. Although negative values of RSCA and RSCA were also found for some fruits viz., apple (-0.30) in 2011, melon (-0.20) and (-0.07) during the year 2013 and 2017, and watermelon (-0.62, -0.28, -0.03, -0.44, -0.52 and -0.12) during the years of 2010, 2011, 2012, 2013, 2018, and 2019 respectively. Apricot had the absolute highest comparative advantage among all other major fruits during the study period and has reached its RCA value of 71.82 with an RSCA value of 0.97 in year 2018 which was highest comparative advantage among all the major fruits. Due to the high quality and demand, the Afghanistan's fresh fruits sold at high prices in international market and this cause a better comparative advantage and export potential of fresh fruits in Afghanistan. Although some fruits have comparative disadvantage in export during the years due to the less production, climatic effects on the quality of fruits, and lake of marketing services in the same years. In case that the government of Afghanistan help producers of major fresh fruits with the facilities of efficient transportation, warehousing, storing and cold chain and providing peaceful environment and stability for traders and investors to have exports to international markets can able Afghanistan to obtain high export potential of major fresh fruits in the future. Similar results were observed by Naseri & Zaka (2021) and Ahmad *et al.,* (2021) in their respective studies.

5.2.4 Export potential of dry fruits in Afghanistan

The value of comparative advantage (RCA and RSCA) in the export of dry fruit has shown that Afghanistan had an absolute comparative advantage in the export of dry fruits. Dried fig had the absolute highest comparative advantage and export potential among all other major fruits during the study period and has reached its RCA value of 392.67 with an RSCA value of 0.99 in year 2019. As seen in table 4.22 the values of RCA and RSCA are

positive for all dry fruits. This means that Afghanistan had the greatest potential for export of dry fruits Due to the high demand and high price of Afghanistan dry fruits in India, Pakistan, UAE and Russia which are the mine markets of Afghanistan dry fruits (Raoufi 2019). Providing Efficient marketing service and focused on the quality standards at global level can help Afghanistan to obtain high export potential of dry fruits in the future. Same findings were obtained by Guledgudda *et al.,* (2014), Ahmad *et al.,* (2021) and Zaka & Naseri (2021) in their respective studies.

5.3 Constraints in export and import of major fruits and dry fruits in India and Afghanistan

In this chapter, the major constraints in export and import of major fresh fruits and dry fruits in India as well as Afghanistan are identified based on various published sources, including latest research papers related to India as well as Afghanistan. In current study, these constraints divided into three categories: first, the major constraints or difficulties that farmers face in producing major fruits and dry fruits in India and Afghanistan; second, the constraints or difficulties that traders face in trading major fruits and dry fruits in India and Afghanistan; and third, the major factors that limit the producing and export of major fruits and dry fruits in India and Afghanistan.

5.3.1 Constraints in export and import of major fruit and dry fruits in India

5.3.1.1 Major problems faced by farmers producing fruits and vegetables in India

Farmers don't express production issues as much as they do facilitative restrictions. Quality goods are crucial overall to satisfy the demands of importing nations. carried study on status and constraints in Indian fruits and vegetable export some of the main constraints and challenges faced by farmers or producers of major fresh and dry fruits which are mentioned as bellow.

- **Failing to fulfil export quality standards**

The importing nations suggest specific quality requirements for each good. Farmers were unable to serve distant markets as a result due to a lack of improved net pricing. Similar constraint observed by Thulasiram 2020 and Negi & Anand 2015.

- **Insufficient storages and transportation facilities**

As most of the fruits and are perishable and need to transfer to the market on time, but due to poor transit system and lack of transportation most of the fresh fruits are wests before it reaches to the local market. Similar finding observed by Baliyan *et al.,* 2022 and Thulasiram 2020 in their study.

- **Dependence on the use of pesticides**

Application of pesticides by the farmers needs more money but the situation is aggravated when the farmers have huge dependency on these chemicals. Since the pesticide efficiency does not depend not only on the quality of the chemical but also on the knowledge

of the framers about how to use and apply the chemical. These issues related to pesticide make one of the constraints for producing quantity of fruits in India. Similar findings have obtained by Thulasiram 2020.

- **Insufficient institutional support**

One of the essential components for the development of agriculture is credit. It provides farmers with funds to make new investments and/or embrace cutting-edge technology. Possession of assets and profits is a requirement for obtaining institutional credit, and these factors are used to evaluate a potential borrower's creditworthiness. Access is prohibited in the absence of such creditworthiness. In this way lack of financial support for the growers leads to the low production of fruits. Similar findings have obtained by Chandra and kar (2006), Thulasiram (2020) and Baliyan *et all*., (2022) in their respective studies.

5.3.1.2 Major problems faced by agricultural traders in India

As India have huge trade relation with many countries and export import large amounts of different agricultural commodities especially fresh and dry fruits, while there are some major problems faced by traders which have witness effect on agricultural trade and restrict the export and import of fruits as well. The main problems faced by Agricultural traders during the export and import of fruits in India, are mentioned as bellow.

- **Poor or Inadequate infra-structure facilities,**

The main issue facing India's fruit exporters is the lack of adequate infrastructure facilities. According to a report, there are not enough timely infrastructure facilities, such as controlled atmosphere (CA) containers, quality packing materials, cool chains, and reefer vans, accessible for export. Lack of post-harvest handling standards. Similar finding observed by Thulasiram (2020) in his study.

- **Lack of standards for post-harvest processing.**

Lack of standards for post-harvest processing is another most significant issue. This demonstrates the requirement for procedure standardization and instruction on post-harvest handling as well as controlled and modified atmosphere storage facilities.

Generally, the constrains can divide on two categories

Generally, the problems can be divided into "Supply Chain Issues," which are endemic to the domestic food product supply chain, and "Market Access Issues," which are made up of a variety of criteria and elements that are influenced by the needs of the target countries (Chandra and Kar 2006)

A. Supply Chain Issues

These issues include, Inefficient size of operation, variability in supply and quality, inability to compete on price because of regulatory changes, intermediaries, and wastages/

losses, insufficient and inappropriate distribution and storage infrastructure, and the agro-industrial sector have lacks of technological help.

B. Market Access Issues

Non-Trade Barriers (Import policy restrictions, standards, testing, labelling, and certification requirements, Antidumping and Countervailing Measures, Export subsidies as well as domestic assistance and Public sector contracting), brief product life cycle, and poor brand image.

Similar findings have obtained by Chandra and Kar (2006) and Mir & Kottaiveeran (2016) in their respective studies.

5.3.1.3 Major Factors limiting fruits production and export in India

- **Identifying International Markets**

Every product has a value in the marketplaces where it is sold. Due to a robust market and better profitability, the bulk of fruits and vegetables grown in India are exported, or vice versa (Gechbaia *et all.,* (2021) and Mir and Kottaiveeran 2016)

- **Lack of finance**

Due to the necessity for money for domestic purposes, the majority of dry fruit producers sell their harvest in the neighborhood markets (Thulasiram 2020)

- **Lack of storages**

In India, where 30 - 40 per cent of annual fruit production is wasted before it reaches the consumer market, just few about (10%) of the cold storage facilities are available for produced fruits (Mir and Kottaiveeran. 2016)

- **Lack of Infrastructure**

India's main barrier to exporting fruits and vegetables is a lack of infrastructure, including transportation, power supplies, and highways, dumping sites, packing units, and processing facilities. (Thulasiram 2020, Gechbaia *et all.,* 2021 and Baliyan *et all*., 2022)

- **Low profile of government policies**

A large portion of the population depends on the horticulture industry, and those individuals need money for labor, fertilizer, pesticides, sprays, transportation costs, packing expenses, etc. It is not feasible for everyone to meet these costs, so as a result, 30–40 percent of production is wasted, and the export share also decreases.

These results are conformity with findings of Mir and Kottaiveeran (2014-15), Thulasiram (2020), Gechbaia *et all.,* (2021) and Baliyan *et all*., (2022) in their respective studies.

5.3.2 Constraints in export and import of major fruit and dry fruits in Afghanistan

Looking into the current situations of Afghanistan there are numbers of constraints which have witness effect on agricultural trade and restrict the export and import of fruits as

well. In this study, the major constraints in export and import of major fruits and dry fruits in Afghanistan which are collected from various published sources, identified in three categories which are mentioned as bellow.

5.3.2.1 Major problems faced by farmers producing fruits in Afghanistan

- Lack of appropriate management of water resources
- Lake of infrastructures and cold storages
- Damaged interurban and village roads
- Lack of professional Horticultural structure
- Shortage of farms and research centers
- Nonappearance of Agricultural banks
- Insecure situation in Afghanistan
- Lack of technical staff in agricultural sector
- Lack of awareness among the farmers related to modern gardening methods
- Lack of investment in agriculture sector, especially in Horticulture
- Lack of synergy between farmers and Department of Agriculture

Similar findings observed by Finetto (2011), Yousufi (2016), World Bank report (June 2017), and Hashmi *et all.*, (2020).

5.3.2.2 Major problems of Agricultural trade in Afghanistan

The main problems faced by exporters and importers of agricultural commodities which it also makes constraints in export and import of major fruits and dry fruits in Afghanistan are mentioned as bellow.

- **Afghanistan's geographical location (Land Lock Country)**

This is a major issue for the traders because it makes the country dependent on its two neighbors, Iran and Pakistan, and it raises the price of shipping export goods to abroad. Similar findings have observed by Maley (2010) and), Rahimi & Artukoğlu (2021).

- **Problem related to marketing services**

Problem related to marketing services such as lack of storage facilities, packing and packaging conditions, name and brand of commodities, designing, processing etc**.** Similar findings have observed by Rahimi & Artukoğlu (2021)

- **Lack of incentives for investors**

Governmental and private banks don't offer incentives for the processing of agricultural products by denying investors small, medium, and large-scale loans at interest-free or low rates of interest. The export of agricultural goods is also severely hampered by the lack of development banks for investors and traders. Similar findings have observed by Yousufi (2016) and Rahimi & Artukoğlu (2021)

- **Constraints in commercial dealings with neighbors**

Another issue facing by traders of agricultural products is the absence of positive working relationships with neighbors and the non-implementation of signed trade agreements and contracts with neighbors and regional nations. Similar finding has reported by Yousufi (2016) and Rahimi & Artukoğlu (2021)

- **Ongoing civil conflicts and a security crisis**

The lack of proper security for the transportation of exported and imported goods to the country's ports is one of the key issues faced by traders. Other significant issues affecting the country's export include the kidnapping of certain traders and theft of traders' products on the highways. Same result obtained by Rahimi & Artukoğlu (2021)

- **Adoption to the international marketing system**

Afghan producers are unable to use conventional or modern marketing strategies to advertise their goods online or internationally. Today, marketing is essential for creating demand and inspiring customers to purchase goods. Due to the absence of an effective worldwide marketing structure, the majority of Afghanistan's exports are not promoted under the name of Afghanistan. The finding was also obtained by Rahimi & Artukoğlu (2021).

- **Problems related to training and communication**

One issue affecting the nation's exports is the lack of training workshops for traders and farmers in a variety of areas, including production, harvesting, marketing, tax systems, processing, packaging, storage of products, etc. A significant barrier to the export business is also the ineffective communication between farmers and dealers and between traders and government authorities. Another significant issue in the area of agricultural exports is the lack of awareness of farmer issues. Similar finding has obtained by Yousufi (2016) and Rahimi & Artukoğlu (2021).

- **Poor Mechanism for ensuring the quality of goods and services**

Unfortunately, there is no rigorous quality control mechanism in place at the country's customs. As a result, Afghanistan's export goods encounter significant difficulties because they cannot be sold in foreign markets because of the required quality control certificates. From a global standpoint, exporters in Afghanistan have not been able to obtain this document due to absence of authority. Similar result reported by Fitrat & Verma (2015) and Rahimi & Artukoğlu (2021) in their study.

- **Border security problems**

Afghanistan has long border (5,529 kilometers) with neighboring countries, among them the longest border about 2,430 Kilometers with Pakistan. Due to its length, security of border is most challenging. Similar finding has observed by Fitrat & Verma (2015) and Rahimi & Artukoğlu (2021) in their study.

- **Misunderstanding of the free market economy**

Due to lack of accountability of governments as well as markets, is biggest barrier for free market economy system as a result exports of fruits as well as dry fruits worse effected.

Similar findings obtained by Yousufi (2016), Rahimi & Artukoğlu (2021), and Hashmi *et all.*, (2020).

5.3.2.3 Major Factors limiting fruits production and export in Afghanistan

Since Afghanistan's agricultural sector, especially the horticultural sector, has many problems and challenges in the region of production, export, and import of fresh and dry fruits, there have been some major factors which limiting the production and export of fruits in Afghanistan, these are mentioned below.

Low capacity of fruits producers and exporters and lack of awareness about regional and international markets

These problems include from production to export and receiving the desired markets, as bellow.

- Fluctuation trends in production of fruits and dry fruits.
- Lack of knowledge among the farmers regarding package and practices of modern techniques of agriculture especially for horticultural crops.
- Non availability of quality seeds/ planting materials.
- Improper post-harvest handling practices.

Similar findings obtained by Yousufi (2016), Rahimi & Artukoğlu (2021), and Hashmi *et all.*, (2020).

Lack of warehouses and laboratories

- Lack of warehouses, cold storage and pack houses, may leads to quality deterioration which affects the export of fruits and dry fruits.
- There are lack/absence of quality check laboratories in Afghanistan, may effects the exports of fruits and dry fruits.
- The problem of highways, roads and connecting routes to the cities for fast transfer of fruits to export.
- Lack of refrigerated containers and road safety problems

Similar findings observed by Finetto (2011), Yousufi (2016), and Rahimi & Artukoğlu (2021) in their respective studies.

Lack of cooperation and support from pertinent departments, as well as breaking legal and regulatory requirements

- Lack of sufficient government support during the fruit production season.
- Non-observance of hygiene and safety in the production, packaging and export of fresh fruits.

- Failure to comply with standards in processing, sorting and packaging according to the demand of national and international markets
- Failure to issue valid certificates according to globally accepted standards and lows
- High fares of air and ground transportation.
- The complexity of business laws that do not meet the conditions of the country, such as the imposition of customs tariffs and the payment of company provisions later from every three months
- Lack of coordination between the private and public sector, especially the fresh fruit sector

Similar findings observed by Yousufi (2016), Rahimi & Artukoğlu (2021), and Hashmi *et all.*, (2020) in their respective studies.

CHAPTER-VI

SUMMARY AND CONCLUSIONS

Foreign trade is a vehicle of growth and development and helps not only in procuring the latest machinery, equipment and technology but also the goods and services, which are not available indigenously. Therefore, it occupies a very prominent place in the list of priorities of the economic set up of developing countries because they contribute largely to foreign exchange pool.

Due to India's varied environment, various kinds of fresh fruits, dry fruits and vegetables are always available. After China, it is the second-largest producer of fruits and vegetables in the world. According to the National Horticulture Database's report 2020–21, India produced 102.48 million metric tonnes of fruits, and covered an area of 9.6 million hectares. The majority of fresh fruits exported from the country are apple, banana, grape, mango, papaya, orange, pineapple, pomegranate and watermelon with the share of nearly one per cent in the global market, while the majority of dry fruits exported from India are arecanut, cashewnut, raisin, walnut, peanut and dried fig with the share of nearly 2.5 per cent in the global market (APEDA,2019). Bangladesh, the United Arab Emirates, Nepal, the Netherlands, Malaysia, Sri Lanka, the United Kingdom, Oman, and Qatar are major markets for Indian fresh fruits. The average annual value of agricultural exports from India during the decade (2000-10) was Rs. 51,472 crores, whereas the following decade (2011-19), with an average value of Rs. 221,520 crores, saw a multi-time growth. Results of the study revealed that ten-fold increment were recorded in agricultural exports, with a compound average growth rate of 15.72 percent during the period 2001-2019 (Jitender Kumar Bhatia *et al.*, 2021).

Afghanistan is a landlocked country with plains and mountains located primarily in central Asia. Nearly 71.4 per cent of Afghanistan’s population lives in rural areas, most of which are resource-poor farmers whose livelihoods depend on agriculture and livestock. Therefore, Afghanistan's economy is mainly based on agriculture and livestock production. The global market of raisins, pistachios, dried apricots, almonds and walnuts is more than 2.2 billion US dollars, of which Afghanistan currently claims less than 3 per cent. Most of these agricultural products were formerly produced on a large scale and continue to enjoy international recognition for quality. For example, raisins are Afghanistan’s primary agricultural export commodity and once accounted for 60 per cent of the world’s market. India, Pakistan and Russia offer large, nearby markets in which Afghanistan agricultural products could begin regaining market share. The world’s largest importers of these products, India for almonds and Russia for dried apricots are natural regional markets. Low productivity

of current orchards and production facilities as well as a lack of machinery for grading and sorting, drying and packaging are some of the major issues facing by the industry (Rasoly and Chandrashekar, 2018).

In the vision of the above concerns, the present study was conducted to update the information related to the export and import of major fresh and dry fruits in India as well as Afghanistan from 2010 to 2019. The study was based on the secondary data collected from various published and unpublished sources. Secondary data related to export and import of major fruits and dry fruits were collected from the year 2010 to 2019. Study was concentrated on following objectives:

1. To analyse the trends of export and import of fruits and dry fruits in India and Afghanistan.
2. To study the export potential of major fruits and dry fruits in Afghanistan as well as India.
3. To identify the constraints in export and import of major fruits and dry fruits in India and Afghanistan.

Mango and peanut covered maximum area among all major fresh fruits and dry fruits with the total average of 2311 and 5096 thousand hectares, respectively. Whereas, fig had the lowest average of total area about 6 thousand hectares during the study period 2010 to 2019.

In case of total production, banana has found to be highest production among all major fresh fruits and dry fruits. As far as dry fruits, peanut had the highest average of total production of 7443 thousand metric tonnes per year during the same period.

Among all major fresh and dry fruits of India, papaya had the highest productivity with the total average of 41.6 metric tonnes per hectare during the study period. Whereas, in case of dry fruits, arecanut had the highest productivity with the total average value of 1.5 metric tonnes per hectare.

Likewise, in Afghanistan, grape and almond covered maximum area among all major fresh fruits and dry fruits with the total average of 75.0 and 16.9 thousand hectares, respectively. While, fig had the lowest total average of area which was 1.9 thousand hectares during the years 2010 to 2019.

In case of production, grape during the study period 2010 to 2019 has founded to be754 thousand metric tonnes per year which was the highest production among all major fresh fruits and dry fruits. Whereas, in case of dry fruits, almond had the highest average production of 41 thousand metric tonnes per year during the same period.

Among all major fresh and dry fruits of Afghanistan, watermelon had the highest productivity with the total average of (11.7 MT/ha) during the study period. Whereas, in case of dry fruits, walnut had the highest value of productivity (3.6 MT/ha) followed by

watermelon, melon had the second highest productivity with the average value of 10.1 metric tonnes per hectare during the study period.

Total export of major fresh fruits from India was 320,768 tonnes with the overall value of Rs. 135,866 lakhs in 2010 which has increased up to 643,705 tonnes with the overall value of Rs. 426,274 lakhs in year 2019.

Grape had the highest export among all major fresh fruits exported from India, with the average amount of 139,886 tonnes, with a value of Rs. 121,497 lakhsand 0.63 per cent share in India's total agricultural export. Whereas, pineapple had the lowest average amount of export with 3,674 tonnes with a value of Rs. 1,683 lakhs and 0.01 per cent share in India's total agricultural export during 2010 to 2019.

Total export of dry fruits from India was 120,645 tonnes with the overall value of Rs. 315,948 lakhs in year 2010 which has increased up to 162,517 tonnes with the overall value of Rs. 629,449 lakhs during the years 2019.

Cashewnut had the highest export among all dry fruits exported from India, with the average amount of 105,640 tonnes, with a value of Rs. 469,835 lakhs and 2.55 per cent share in India's total agricultural export during the study period. Whereas arecanut had the lowest average amount of export with 3,810 tonnes with a value of Rs. 6,115 lakhs and 0.04per cent share in India's total agricultural export during 2010 to 2019.

Total import of major fresh fruits in India was 129,703 tonnes with the overall value of Rs. 59,642 lakhs in year 2010 which has increased up to 393,764 tonnes with the overall value of Rs. 268,410 lakhs during the year 2019.

Apple had the highest import among all major fresh fruits imported to India, with the average amount of 215,146 tonnes, with a value of Rs. 137,169 lakhs and its average share in India's total agricultural import was 1.08 per cent. Whereas pomegranate had the lowest average quantity of import with 1,122 tonnes with a value of Rs. 616 lakhs and its average per cent share in India's total agricultural import was 0.01 per cent during 2010 to 2019.

Total import of dry fruits in India was 733,165 tonnes with the overall value of Rs. 402,857 lakhs in year 2010 which has increased up to 1,398,458 tonnes with the overall value of Rs. 1,857,511 lakhs during the year 2019.

Cashewnut had the highest import among all major dry fruits imported to India, with the average amount of 796,597 tonnes, with a value of Rs. 699,940 lakhs and its average share in India's total agricultural import was 5.49 per cent. Whereas dried apricot had the lowest average of import with 3,724 tonnes with a value of Rs. 8,680 lakhs and its average per cent share in India's total agricultural import was 0.07 per cent during year 2010 to 2019.

Similarly, Total export of major fresh fruits from Afghanistan was 44,760 tonnes with the overall value of Rs. 10,420 lakhs in year 2010 which has increased up to 280,265 tonnes with the overall value of Rs. 64,837 lakhs during the year 2019.

Grape had the highest export among all major fresh fruits exported from Afghanistan, with the average quantity of 69,054 tonnes, with a value of Rs. 17,795 lakhs and its average share in Afghanistan's total agricultural export was 5.00 per cent. Whereas watermelon had the lowest average amount of export with 2,218 tonnes with a value of Rs. 356 lakhs and its average percentage share in Afghanistan's total agricultural export was 0.12 per cent during 2010 to 2019.

Total export of dry fruits from Afghanistan was 62,681tonnes with the overall value of Rs. 81,003 lakhs in during the year 2010 which has increased up to 81,388 tonnes with the overall value of Rs. 209,103 lakhs during the year 2019.

Raisin had the highest export among all dry fruits exported from Afghanistan, with the average amount of 33,321 tonnes, with a value of Rs. 1,842 lakhs and its average share in Afghanistan's total agricultural export was 17.18 per cent. Whereas walnut had the lowest average amount of export with 1,831 tonnes with a value of Rs. 3,949 lakhs and its average share in Afghanistan's total agricultural export was 1.69 per cent during the period of 2010 to 2019.

Total import of fresh fruits in Afghanistan was 33,199 tonnes with the overall value of Rs. 6,493 lakhs in year 2010 which has increased up to 134,921 tonnes with the overall value of Rs. 35,673 lakhs during the year 2019.

Banana had the highest import among all imported fresh fruits to Afghanistan, with the average amount of 80,969 tonnes with a value of Rs. 9,369 lakhs and its average share in Afghanistan's total agricultural import was 11.28 per cent. Whereas peach had the lowest average amount of import with 198 tonnes with a value of Rs. 355lakhs and its average share in Afghanistan's total agricultural import was 0.03 per cent during the period of 2010 to 2019.

Total import of dry fruits to Afghanistan was 7,436 tonnes with the overall value of Rs. 6,719 lakhs in year 2010 which has increased up to 33,505 tonnes with the overall value of Rs. 58,254 lakhs during the year 2019.

Dates with the average quantity of 11,311 tonnes and pistachio with the average value of Rs. 8,562 lakhs were the main imported fruits among all other dry fruits imported to Afghanistan, with the average percentage share of 0.38 and 0.59 per cent in Afghanistan's total agricultural import. Whereas raisin had the lowest average quantity of import with 233 tonnes with a value of Rs. 360 lakhs and its average share in Afghanistan's total agricultural import was 0.03 per cent during the period of 2010 to 2019.

To achieve the export potential, the indices of revealed comparative advantage (RCA) and revealed symmetric comparative advantage (RSCA) have been calculated to look into the comparative advantage of major fruits and dry fruits in India as well as Afghanistan in the period of 2010 to 2019.

In the case of major fruits, India had the comparative advantage in the export of grapes in the years 2014, 2016, 2017, 2018 and 2019 with the RCA values of 1.11, 1.36, 1.49,

1.4 and 1.70, and the RSCA values of 0.05, 0.15, 0.20, 0.20 and 0.26, respectively Mango had the absolute highest comparative advantage of export among all other major fruits in 2010, with RCA and RSCA values of 2.77 and 0.47, respectively. Pomegranate experienced the negative value of RSCA and had no comparative advantage in export during the first five years of the study period from 2010 to 2014, which has been shown to be (-0.32, -0.23, -0.18, -0.18, and-0.01) respectively, while it showed a positive value during the last five years of the study (2015 to 2019). RSCA for apples, bananas, oranges, and pineapple had a negative export value from 2010 to 2019 and did not have a comparative advantage in export.

In the case of dry fruits, India had the absolute comparative advantage in the export of cashew nuts and dried figs during the period 2010 to 2019. RCA and RSCA values for arecanut, raisin, and walnut fluctuated over the years, with some years having a positive RSCA value and a comparative advantage in export, while others had a negative RSCA value and no comparative advantage in export from 2010 to 2019.

In the case of major fruits, Afghanistan had an absolute comparative advantage in the export of major fruits. Although negative values of RSCA and RSCA were also found for some fruits, viz., apple (-0.30) in 2011, melon (-0.20) and (-0.07) in 2013 and 2017, and watermelon (-0.62, -0.28, -0.03, -0.44, -0.52 and -0.12) in 2010, 2011, 2012, 2013, 2018, and 2019 respectively. Apricot had the absolute highest comparative advantage and export potential among all other major fruits during the study period 2010 to 2019 and has reached its RCA value of 71.82 with an RSCA value of 0.97 in 2018 and is defined as the year-wise highest comparative advantage.

In case of dry fruits, Afghanistan had an absolute comparative advantage in the export of dry fruits. Dried fig had the absolute highest comparative advantage and export potential among all other major fruits during the study period 2010 to 2019 and has reached its RCA value of 392.67 with an RSCA value of 0.99 in 2019 and is defined as the year-wise highest comparative advantage. there was no negative value for both indices of comparative advantage, although for all dry fruits it shows the highest values during the years 2010 to 2019.

Major constraints faced by fruits and vegetables growers in India are, failing to fulfill export quality standards, insufficient storages and transportation facilities, excess uses of pesticides and insufficient institutional support etc.

Whereas, in case of traders, some of the major constraints were observed which are poor or inadequate infra-structure facilities, lack of standards for post-harvest processing, inefficient size of operation, variability in supply and quality, inability to compete on price, wastages/losses, insufficient or inappropriate distribution and storage facilities and poor market access etc.

Similarly, in Afghanistan, major problems faced by farmers were lack of appropriate management of water resources, lack of infrastructures and cold storages**,** damaged interurban

and village roads, lack of professional horticultural structure**,** shortage of farms and research centers**,** lack of credit facilities**,** non-stability in political situation, lack of technical knowhow, lack of professional staff especially in agricultural sector, lack of knowledge of farmers about modern gardening methods**,** lack of capital formation in agriculture sector, especially in horticulture etc.

While, in case of traders in Afghanistan, geographical location (land lock country), less marketing facilities, lack of incentives for investors, civil conflicts and security crisis, non-adoption of the international marketing system, lack of training and communication facilities, grading and sorting facilities, security issues and misunderstanding of the free market economy.

CONCLUSIONS

Foreign trade occupies a very prominent place for every nation in globalization era. Therefore, study conducted on import and export helps for both India as well as Afghanistan. Major conclusions of study are as follows:

- Total export of major fresh fruits from India was 320,768 tonnes with the overall value of Rs. 135,866 lakhs in 2010 which has increased up to 643,705 tonnes with the overall value of Rs. 426,274 lakhs in year 2019.
- Pomegranate had the highest annual growth rate of export in India, both in quantity and value which has shown to be 16.72 and 20.38 per cent, respectively.
- Total export of dry fruits from India had the increasing compound annual growth rate in quantity as well as value term were positive and estimated to be 3.02 per cent and 7.14 per cent during the year 2010 to 2019, respectively.
- Among all dry fruits exported from India, Peanut had the highest annual growth rate of export in in both quantity and value which has recorded 29.23 and 41.11 per cent, respectively.
- Compound annual growth rate of total import of major fresh fruits in India, both in quantity as well as value term were positive and estimated to be 11.75 and 16.23 per cent during the year 2010 to 2019, respectively.
- Among all imported fresh fruits in India, Kiwi had the highest annual growth rate in both quantity and value which has shown to be 35.23 per cent and 34.24 per cent respectively.
- The compound annual growth rate of the total import of major dry fruits in India, in quantity as well as value terms, was calculated to be 6.67 and 51 per cent, respectively. Walnut had the highest annual growth rate in imports of both quantity and value, which has been shown to be 97.54 percent and 110.17 percent, respectively.
- In Afghanistan, the compound annual growth rate of total export of major fresh fruits in quantity as well as value term were calculated to be 20.13 and 20.06 per cent,

respectively. Apricot had the highest annual growth rate of export in both quantity and value which has shown to be 52.94 and 59.58 per cent, respectively.

- Compound annual growth rate of total export of dry fruits from Afghanistan in quantity as well as value term, were calculated 2.65 per cent and 9.95 per cent, respectively. Dried apricot had the highest annual growth rate of export in both quantity and value which has shown to be 20.70 and 34.30 per cent, respectively.
- Compound annual growth rate of total import of major fresh fruits into Afghanistan, in quantity as well as value term were calculated to be15.05 and 18.57 per cent, respectively.
- Compound annual growth rate of total import of major dry fruits in the term of quantity as well as value, were calculated to be16.25 per cent and 24.11 per cent respectively.
- Mango had the absolute highest comparative advantage of export among all other major fruits in the years 2010. While, apples, bananas, oranges, and pineapple had a comparative dis-advantage during the study period.
- Indian pomegranate had comparative disadvantage in first five years of the study (2010-2014), while at the last five years of the study (2015-2019) had the comparative advantage in export.
- India had the absolute comparative advantage in the export of cashew nuts and dried figs, while walnut and peanut had comparative disadvantages during the study period.
- In case of Afghanistan's, apricot had the absolute highest comparative advantage and export potential among all other major fruits. While, dried fig of Afghanistan had the absolute highest comparative advantage and export potential among all other dry fruits during the study period.
- Major constraints faced by fruits and vegetables growers in India are, failing to fulfil export quality standards, insufficient storages and transportation facilities, excess uses of pesticides and insufficient institutional support etc.
- Whereas, in case of traders, some of the major constraints were observed which are poor or inadequate infra-structure facilities, lack of standards for post-harvest processing, inefficient size of operation, variability in supply and quality, inability to compete on price, wastages/losses, insufficient or inappropriate distribution and storage facilities and poor market access etc.
- Similarly, in Afghanistan, major problems faced by farmers were lack of appropriate management of water resources, lake of infrastructures and cold storages**,** damaged interurban and village roads, lack of professional horticultural structure**,** shortage of farms and research centers**,** lack of credit facilities**,** non-stability in political situation, lack of technical knowhow, lack of professional staff especially in agricultural sector,

lack of knowledge of farmers about modern gardening methods**,** lack of capital formation in agriculture sector, especially in horticulture etc.

- While, in case of traders of in Afghanistan, geographical location (land lock country), less marketing facilities, lack of incentives for investors, civil conflicts and security crisis, non-adoption of the international marketing system, lack of training and communication facilities, grading and sorting facilities, security issues and misunderstanding of the free market economy.

SUGGESTIONS / POLICY IMPLICATIONS

Based on the conclusions of results from the study, following recommendations are suggested.

- Both nations should focus on quality standards of fresh as well as dry fruits in which they have relative comparative advantage at global level.
- Need integration of various export promotion programmes provided by various ministries and affiliated organizations.
- Establishment of Agri-Export zones to improve infrastructure facilities especially for food processing.
- Encourage laboratories that analyse food to obtain accreditation from global organizations and establish a world-class infrastructure for independent food testing and inspection, especially in areas with a high concentration of exporters.
- Government should help producers and traders of major fruits and dry fruits with the facilities of efficient transportation, warehousing, storing and cold chain (fruits are more perishable).
- Encourage export consolidation to fulfill importers' minimum order requirements and establish a robust system for market intelligence to assist exporters in making informed decisions.
- To enable high value exports from India, introduce certified zoning systems like pesticide free zones, organic production zones, and disease free zones.
- Encourage organic farming certification for various crops and creation of international brands based on India's strengths.
- Encourage development of efficient infrastructure for research and development to enable technological advancement for the maintenance and expansion of export market share.
- The Afghanistan government should provide a peaceful environment and stability for traders and investors to have exports to international markets so that most investors and traders, especially fresh and dry fruit financiers and traders.
- The Afghanistan Chamber of Commerce & Industries (ACCI) and the Afghanistan Ministry of Commerce & Industries (MOCI) must have active contact and strong

relations with the producers, farmers, and traders and also need active contact with the international traders and markets as well to sell their products on time.

- Need to build scale and sophistication in the value chain, the Centre's **Horticulture Cluster Development Programme** could act as a game changer.
- There is need to develop more integrated pack houses with required pre shipment treatment facilities such as Vapor Heat Treatment (VHT), Hot Water Treatment (HWT) and Irradiation etc .
- Proper handling of produce at airport: Capacity building of handlers is required.
- Need to strengthen contract farming in large areas to get the export oriented production of same quality. •
- Need to organize regular training programmes for farmers on pre and post harvest requirements for export oriented production.

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Appendix –A

Table A.1: Area, production and productivity of Apple, banana and Grape in India.

Year	Apple			Banana			Grape		
	Area (ha)	Production (MT)	Yield (kg/ha)	Area (ha)	Production (MT)	Yield (kg/ha)	Area (ha)	Production (MT)	Yield (kg/ha)
2010	282,900	1,777,200	6,282.08	830,000	29,780,000	35,880	106,400	880,700	8,277
2011	289,100	2,891,000	10,000.00	796,500	28,455,100	35,725	111,000	1,235,000	11,126
2012	321,900	2,203,400	6,844.98	776,000	26,509,000	34,161	116,000	2,221,000	19,147
2013	312,000	1,915,000	6,137.82	796,000	27,575,000	34,642	118,000	2,483,000	21,042
2014	313,040	2,497,680	7,978.79	802,570	29,724,550	37,037	118,740	2,585,340	21,773
2015	319,000	2,134,000	6,689.66	822,000	29,221,000	35,549	120,000	2,602,000	21,683
2016	277,000	2,521,000	9,101.08	841,000	29,135,000	34,643	122,000	2,590,000	21,230
2017	305,000	2,265,000	7,426.23	860,000	30,477,000	35,438	137,000	2,922,000	21,328
2018	301,000	2,327,000	7,730.90	884,000	30,808,000	34,851	139,000	2,920,000	21,007
2019	308,000	2,316,000	7,519.48	866,000	30,460,000	35,173	140,000	3,041,000	21,721
Mean	302,894	2,284,728	7,571.10	827,407	29,214,465	35,309.86	122,814	2,348,004	18,833.54
CAGR%	0.85	2.68	1.81	0.43	0.23	-0.20	2.78	13.19	10.13
% Change in 2019 over 2010	**0.90**	**0.30**	**0.20**	**0.40**	**0.20**	**-0.20**	0.32	2.45	1.62

Table A.2: Area, production and productivity of Mango, Papaya and Orange in India.

Year	Mango			Papaya			Orange		
	Area (ha)	Production (MT)	Yield (kg/ha)	Area (ha)	Production (MT)	Yield (kg/ha)	Area (ha)	Production (MT)	Yield (kg/ha)
2010	2297000	15188000	6,612	106,000	4,196,000	39,585	631,300	5,966,400	9,451
2011	2378100	16196400	6,811	117,400	4,457,100	37,965	481,000	4,571,000	9,503
2012	2500000	18002400	7,201	132,000	5,382,000	40,773	490,800	4,360,400	8,884
2013	2516000	18431300	7,326	135,000	5,544,000	41,067	634,400	6,426,200	10,130
2014	2163000	18527000	8,565	133,360	5,639,300	42,286	664,910	7,317,610	11,005
2015	2209000	18643000	8,440	115,000	4,913,000	42,722	686,000	7,710,000	11,239
2016	2212000	19506000	8,818	132,000	5,667,000	42,932	641,000	7,581,000	11,827
2017	2258000	21822000	9,664	134,000	5,940,000	44,328	601,000	7,647,000	12,724
2018	2296000	21378000	9,311	138,000	5,989,000	43,399	613,000	8,367,000	13,649
2019	2281000	20265000	8,884	149,000	6,050,000	40,604	656,000	9,509,000	14,495
Mean	2,311,010	18,795,910	8,163	129,176	5,377,740	41,566	609,941	6,945,561	11,290.77
CAGR%	-0.07	2.93	3.00	3.46	3.73	0.25	0.38	4.77	4.37
% Change in 2019 over 2010	-0.01	0.33	0.34	0.41	0.44	0.30	0.40	0.59	0.53

Table A.3: Area, production and productivity of Pineapple, Pomegranate and Watermelon in India

Year	Pineapple			pomegranate			Watermelon		
	Area (ha)	Production (MT)	Yield (kg/ha)	Area (ha)	Production (MT)	Yield (kg/ha)	Area (ha)	Production (MT)	Yield (kg/ha)
2010	91,900	1,386,800	15,090	107300	743,100	6,925	26,753	369,380	13,807
2011	89,000	1,415,000	15,899	112200	772400	6,884	67,400	1,436,500	21,313
2012	102,000	1,500,000	14,706	113300	745000	6,575	71,000	1,727,000	24,324
2013	105,000	1,571,000	14,962	130800	1345700	10,288	81,000	1,789,000	22,086
2014	109,880	1,736,740	15,806	180600	1789300	9,908	75,000	1,810,000	24,133
2015	116,000	1,984,000	17,103	197000	2306000	11,706	89,000	2,145,000	24,101
2016	110,000	1,924,000	17,491	216000	2613000	12,097	95,000	2,325,000	24,474
2017	111,000	1,861,000	16,766	234000	2845000	12,158	91,000	2,182,000	23,978
2018	103,000	1,706,000	16,563	253000	2915000	11,522	101,000	2,520,000	24,950
2019	104,000	1,711,000	16,452	283000	3186000	11,258	100,000	2,495,000	24,950
Mean	104,178	1,679,554	16,084	182,720	1,926,050	9,932	79,715	1,879,888	22,812
CAGR	1.24	2.12	0.87	10.18	15.67	4.98	14.09	21.05	6.10
% Change in 2019 over 2010	0.13	0.23	0.90	1.64	3.29	0.63	2.74	5.75	0.81

Table A.4: Area, production and productivity of Cashewnut, Figs and Walnut in India.

Year	Cashew nut			Fig (dried fig for export)			Walnut		
	Area (ha)	Production (MT)	Yield (kg/ha)	Area (ha)	Production (MT)	Yield (kg/ha)	Area (ha)	Production (MT)	Yield (kg/ha)
2010	923000	613000	664.1	5407	13283	2456.6	30800	38000	1233.8
2011	953200	674600	707.7	5451	13503	2477.2	30800	36000	1168.8
2012	979000	725000	740.6	5500	13737	2497.6	31500	40000	1269.8
2013	992000	753000	759.1	5500	13850	2518.2	31000	36000	1161.3
2014	1011000	753000	744.8	5600	14145	2525.9	31000	43000	1387.1
2015	1030000	745000	723.3	5649	14295	2530.5	31000	35000	1129.0
2016	1036000	671000	647.7	5650	14354	2540.5	31000	33000	1064.5
2017	978000	745000	761.8	5704	14593	2558.4	31000	32000	1032.3
2018	1062000	817000	769.3	5727	14771	2579.2	31500	35000	1111.1
2019	1105000	743000	672.4	5765	14573	2527.8	31400	34000	1082.8
Mean	1,006,920	723,960	719	5,595	14,110	2,521	31,100	36,200	1,164
CAGR	1.82	1.94	0.12	0.64	0.93	0.29	0.19	-1.11	-1.30
% Change in 2019 over 2010	0.20	0.21	0.01	0.64	0.93	0.29	0.20	-0.11	-0.12

Table A.5: Area, production and productivity of Peanut and Arecanut in India.

Year	Peanut			Arecanut		
	Area (ha)	Production (MT)	Yield (kg/ha)	Area (ha)	Production (MT)	Yield (kg/ha)
2010	5860000	8265000	1410	400100	478000	1195
2011	5310000	6964000	1311	400100	478000	1195
2012	4770000	4695000	984	464000	681000	1468
2013	5505210	9472000	1721	446000	609000	1365
2014	4685000	7402000	1580	452000	622000	1376
2015	4560000	6733000	1477	450000	747000	1660
2016	5310000	7462000	1405	474000	714000	1506
2017	5338040	7461530	1398	455000	723000	1589
2018	4887700	9252570	1893	497000	833000	1676
2019	4730770	6727180	1422	522000	901000	1726
Mean	5095672	7443428	1460	456020	678600	1476
CAGR (%)	-2.12	-2.04	0.08	2.70	6.54	3.75
% Change in 2019 over 2010	**-0.19**	**-0.19**	**0.01**	**0.30**	**0.88**	**0.44**

Table A.6: Area, production and productivity of Apple, Apricot and figs in Afghanistan.

Year	Apple			Apricot			Fig		
	Area (ha)	Production (MT)	Yield (kg/ha)	Area (ha)	Production (MT)	Yield (kg/ha)	Area (ha)	Production (MT)	Yield (kg/ha)
2010	8,550	59,850	7,000	8,320	66,560	8,000	1,924	8,658	4,500
2011	8,863	62,041	7,000	8,320	67,995	8,173	2,056	8,224	4,000
2012	9,148	70,000	7,652	8,350	83,500	10,000	2,056	8,250	4,013
2013	10,341	78,597	7,601	9,005	90,000	9,994	2,056	8,300	4,037
2014	12,247	89,403	7,300	9,005	90,000	9,994	1,525	6,100	4,000
2015	13,038	89,733	6,882	9,116	87,686	9,619	1,525	4,996	3,276
2016	19,365	140,903	7,276	8,595	17,894	2,082	1,811	3,143	3,875
2017	26,847	170,443	6,349	18,067	131,816	7,296	1,623	7,963	4,906
2018	28,381	217,192	7,653	18,510	109,086	5,893	1,644	9,481	5,767
2019	27,559	250,324	9,083	17,719	129,363	7,301	3,529	24,319	6,891
Mean	16,434	122,849	7,380	11,501	87,390	7,835	1,875	8,943	4,527
CAGR%	12.42	15.38	2.64	7.85	6.87	-0.91	6.25	10.88	4.35
% Change in 2019 over 2010	2.22	3.18	0.30	1.13	0.94	-0.09	0.83	1.81	0.53

Table A.7: Area, production and productivity of Grape, Melon and Watermelon in Afghanistan

Year	Grape			Melon			Watermelon		
	Area (ha)	Production (MT)	Yield (kg/ha)	Area (ha)	Production (MT)	Yield (kg/ha)	Area (ha)	Production (MT)	Yield (kg/ha)
2010	61,132	397,000	6,494	35,460	350,000	9,870	25,142	251,420	10,000
2011	61,558	492,464	8,000	24,717	250,000	10,114	22,592	203,328	9,000
2012	61,690	590,065	9,565	23,047	222,012	9,633	21,820	190,009	8,708
2013	62,118	610,570	9,829	16,370	180,070	11,000	17,625	176,250	10,000
2014	78,405	744,847	9,500	22,722	274,250	12,070	19,835	301,409	15,196
2015	78,681	805,072	10,232	34,270	302,067	8,814	39,129	328,186	8,387
2016	82,450	874,541	10,607	79,951	506,266	6,332	74,679	862,341	11,547
2017	87,194	923,831	10,595	54,406	559,477	10,283	64,181	821,975	12,807
2018	87,517	984,081	11,244	35,798	373,538	10,435	25,519	344,494	13,500
2019	89,593	1,112,927	12,422	37,136	464,230	12,501	48,298	846,990	17,537
Mean	75,034	753,540	9,849	36,388	348,191	10,105	35,882	432,640	11,668
CAGR %	3.90	10.86	6.70	0.46	2.86	2.39	6.75	12.91	5.78
% Change in 2019 over 2010	0.47	1.80	-1.00	4.73	3.33	-1.00	0.92	2.37	-1.00

Table A.8: Area, production and productivity of Pomegranate in Afghanistan.

Year	Pomegranate		
	Area (ha)	Production (MT)	Yield (kg/ha)
2010	8413	100956	12000
2011	8413	58891	7000
2012	8413	61995	7369
2013	8450	63292	7490
2014	8450	63375	7500
2015	8317	63670	7655
2016	8406	61335	7297
2017	14904	164805	11058
2018	15621	181765	11636
2019	18017	194442	10792
Mean	10,740	101,453	8,980
CAGR%	7.91	6.77	-1.06
% Change in 2019 over 2010	1.14	0.93	5.18

Table A.9: Area, production and productivity of Almond, pistachio and walnut in Afghanistan.

Year	Almond			pistachio			Walnut		
	Area (ha)	Production (MT)	Yield (kg/ha)	Area (ha)	Production (MT)	Yield (kg/ha)	Area (ha)	Production (MT)	Yield (kg/ha)
2010	11210	56000	4996	2257	2560	1134	2380	11900	5000
2011	13469	60611	4500	2351	2735	1163	2317	13902	6000
2012	13490	62000	4596	2341	2727	1165	2317	14002	6043
2013	14114	42215	2991	2325	2739	1178	2317	11122	4800
2014	13703	27400	2000	2286	2741	1199	2317	10426	4500
2015	14676	24246	1652	2242	2742	1223	2317	3650	1575
2016	19481	32843	1686	2242	2759	1231	3949	6515	1650
2017	19793	27291	1379	2212	2767	1251	4580	7145	1560
2018	20053	34413	1716	2195	2755	1255	4814	10804	2244
2019	29203	38205	1308	2180	2764	1268	5025	14690	2923
Mean	16,919	40,522	2,682	2,263	2,729	1,207	3,233	10,416	3,630
CAGR	0.10	-0.04	-0.13	0.00	0.01	0.01	0.08	0.02	-0.05
% Change	1.61	-3.20	-0.74	-0.3	0.8	0.12	1.11	0.23	-0.42

Table A.10: Export (quantity & value) of major fresh fruits Apple, Banana, Grape, Mango, Papaya from India 2010 to 2019

Years	Apple		Banana		Grape		Mango		Papaya	
	MT	Lakh	MT	Lakh	MT	Lakh	MT	Lakh	MT	Lakh
2010	47,493	5,974	60,813	11,453	1,29,125	46,853	16,484	58,863	15,435	1,726
2011	25,749	6,906	40,921	8,055	75,387	36,327	20,974	63,441	18,657	2,312
2012	19,477	5,574	53,793	12,589	1,14,306	70,172	26,472	55,585	18,525	3,196
2013	37,165	8,010	37,150	15,525	1,48,521	1,13,899	28,543	41,280	11,410	3,774
2014	15,797	3,493	54,496	21,238	1,36,740	1,36,542	30,254	42,998	10,840	3,639
2015	18,321	4,348	80,189	32,726	75,666	79,033	32,064	36,779	11,969	5,213
2016	12,660	3,625	1,11,803	40,546	1,47,012	1,47,478	44,366	52,761	12,242	5,408
2017	7,278	2,399	89,837	31,839	1,85,172	1,79,662	38,234	49,180	11,508	4,510
2018	12,894	4,021	1,16,107	37,913	1,71,719	1,88,127	40,650	46,510	8,951	3,396
2019	19,431	6,911	1,73,804	53,453	2,15,216	2,16,875	40,021	49,659	8,982	3,180

Table A.11: Export (Quantity & Value) of major fresh fruits Orange, Pineapple, Pomegranate Watermelon from India 2010 to 2019

Years	Orange		Pineapple		Pomegranate		Watermelon	
	MT	Lakh	MT	Lakh	MT	Lakh	MT	Lakh
2010	16,649	1,735	1,895	403	18,211	7,101	12,684	1,450
2011	27,951	5,705	2,966	599	30,162	14,212	13,522	1,733
2012	26,504	6,825	2,721	778	36,027	23,064	19,891	2,081
2013	26,785	4,782	3,092	1,169	24,505	29,082	19,625	3,509
2014	14,843	3,157	3,469	1,747	21,030	32,327	13,376	3,321
2015	23,512	4,864	2,962	1,598	44,723	44,701	16,658	4,442
2016	30,126	7,014	3,953	2,123	49,852	49,261	18,852	5,314
2017	22,776	5,350	5,176	3,143	52,391	55,985	24,215	5,402
2018	13,522	3,021	4,060	2,511	69,537	67,671	28,963	6,579
2019	54,577	14,355	6,450	2,761	85,429	69,913	34,154	6,296

Table A.12: India export (Quantity & Value) of dry fruits from 2010 to 2019

Years	Arecanut		Cashewnut		Dried figs		Raisin		Walnut		Peanut	
	MT	Lakh	MT	Lakh	MT	Lakh	MT	Lakh	MT	Lakh	MT	Lakh
2010	4,318	5,469	94,238	2,57,824	4,561	14,969	4,219	2,972	6,883	18,043	2,652	1,324
2011	2,560	3,310	1,34,039	4,18,273	5,731	18,733	9,791	5,620	5,559	20,800	8,827	5,538
2012	1,972	2,919	1,05,679	4,11,436	2,109	7,179	33,256	28,508	5,557	21,128	5,365	4,184
2013	1,813	2,945	1,30,428	5,42,495	9,198	39,629	34,870	24,926	6,997	32,945	6,779	5,924
2014	4,145	4,937	1,32,286	5,39,038	9,525	41,037	15,679	13,973	4,032	20,278	11,747	10,510
2015	4,387	7,355	1,09,754	5,23,118	10,927	49,873	21,969	17,003	2,620	13,411	19,295	17,873
2016	10,349	15,060	88,727	4,99,220	8,411	40,101	35,756	29,912	2,719	6,664	19,462	20,149
2017	4,047	6,771	97,316	6,24,186	12,726	65,953	24,058	22,016	3,068	9,733	32,123	31,584
2018	2,240	6,038	79,486	4,70,702	9,725	55,545	22,967	29,444	2,469	9,332	25,572	27,051
2019	2,268	6,342	84,445	4,12,052	11,935	67,690	23,879	26,552	1,702	5,539	34,456	41,437

Table A.13: India import (Quantity & Value) of major fruits in 2010 to 2019

Years	Apple		Grape		Kiwi		Orange		pear		Pomegranate	
	MT	Lakh	MT	Lakh	MT	Lakh	MT	Lakh	MT	Lakh	MT	Lakh
2010	93,264	42,317	2,861	2,787	2,112	1,707	9,614	3,591	13,830	4,340	3,302	1,573
2011	1,79,015	86,941	3,899	4,179	3,886	3,211	24,770	8,569	17,409	6,486	1,573	714
2012	1,86,368	1,04,937	3,952	4,921	5,460	4,889	32,566	11,550	19,306	7,917	1,304	679
2013	1,94,335	1,23,815	4,078	5,725	5,492	5,505	34,242	10,851	16,322	8,255	636	363
2014	2,04,570	1,43,039	3,774	5,693	6,575	7,917	49,004	16,970	16,308	9,435	653	415
2015	1,93,692	1,34,683	5,107	8,322	12,389	14,212	49,055	18,151	21,978	13,276	1,173	513
2016	2,46,808	1,59,790	4,558	7,243	24,481	21,611	56,014	21,478	33,589	18,579	1,026	954
2017	3,30,605	2,00,355	5,423	7,135	27,112	22,348	48,881	19,831	18,030	12,021	121	91
2018	2,80,094	2,04,022	6,436	7,891	40,287	34,497	83,701	32,209	18,750	14,897	1,019	561
2019	2,42,713	1,71,791	8,159	9,367	43,205	32,443	72,902	29,136	20,059	15,916	411	296

Table A.14: India Import (Quantity & Value) of dry fruits (Almond, Dried apricot, Arecanut, Cashewnut, Dates) in 2010 to 2019

Years	Almond		Dried apricot		Arecanut		Cashewnut		Dates	
	MT	Lakh	MT	Lakh	MT	Lakh	MT	Lakh	MT	Lakh
2010	55,066	1,05,125	2,682	3,375	12,331	9,506	4,53,237	2,06,323	1,93,467	43,459
2011	86,641	1,73,783	2,727	3,359	21,945	15,096	8,01,098	5,39,852	2,56,295	66,141
2012	88,779	2,08,254	2,162	2,217	46,172	19,193	8,25,996	5,01,551	2,47,300	60,197
2013	1,03,997	3,19,795	4,709	7,999	6,696	7,700	8,36,615	4,88,812	3,11,575	1,07,333
2014	98,416	3,83,902	3,370	7,735	40,378	52,188	9,07,672	6,28,343	3,37,208	1,21,722
2015	96,017	4,74,996	3,841	8,987	55,791	85,680	9,72,211	8,53,482	3,14,477	1,21,059
2016	1,28,760	4,65,737	2,404	5,513	19,149	33,593	7,30,971	8,12,716	3,50,022	1,41,882
2017	1,47,675	5,21,552	5,457	16,176	13,522	32,790	7,05,985	9,71,695	3,73,506	1,58,008
2018	1,55,355	5,61,620	5,748	19,251	16,648	38,982	8,75,830	11,95,190	4,14,619	1,76,044
2019	1,66,900	5,99,080	4,143	12,184	13,614	27,060	8,56,353	8,01,439	2,81,961	1,15,497

Table A.15: India Import (Quantity & Value) of dry fruits (Dried figs, Pistachio, Raisin, Walnut) in 2010 to 2019

Years	Dried figs		Pistachio		Raisin		Walnut	
	MT	Lakh	MT	Lakh	MT	Lakh	MT	Lakh
2010	4,561	14,969	5,012	15,907	5,748	3,996	19	21
2011	5,731	18,733	8,818	29,383	5,206	3,877	151	203
2012	2,109	7,179	8,257	28,766	6,255	7,318	109	153
2013	9,198	39,629	10,450	41,792	12,223	18,700	275	611
2014	9,525	41,037	10,297	46,153	15,018	26,729	484	1,355
2015	10,927	49,873	10,841	70,417	15,153	34,122	4,399	9,277
2016	8,411	40,101	9,710	66,690	15,155	37,209	7,122	13,102
2017	12,726	65,953	13,543	87,973	17,847	49,728	21,687	39,874
2018	9,725	55,545	15,847	1,11,207	21,515	64,882	15,554	30,468
2019	11,935	67,690	16,725	1,20,571	24,924	75,441	17,188	35,362

Table A.16: Export (Quantity & Value) of major fresh fruits from Afghanistan in 2010 to 2019

Years	Grapes		Pomegranate		Apple		Melon		Apricot		Watermelon	
	MT	Lakh	MT	Lakh	MT	Lakh	MT	Lakh	MT	Lakh	MT	Lakh
2010	16,089	3,133	13,632	3,178	9,366	2,141	3,866	1,288	392	75.4482	133	35
2011	24,313	4,590	2,357	660	1,465	336	20,565	6,718	1,934	541	98	57
2012	19,756	2,296	2,444	440	3,900	642	2,033	332	3,465	734	186	101
2013	5,585	989	2,681	903	24,418	4,506	531	131	3,239	928	555	65
2014	8,655	4,754	5,494	4,024	4,235	2,118	4,170	1,781	3,634	3,398	3,674	449
2015	8,176	4,130	6,260	3,614	32,400	10,212	5,468	2,934	4,559	2,048	2,013	387
2016	1,11,412	26,763	6,635	3,260	8,253	3,980	2,782	748	6,816	3,599	4,609	929
2017	1,57,335	58,006	31,946	5,903	21,619	9,185	2,574	477	7,969	5,043	4,818	886
2018	2,00,592	43,553	60,310	10,782	19,329	7,471	7,425	976	34,623	10,986	1,680	182
2019	1,38,627	29,741	61,081	10,385	22,030	7,192	12,389	1,849	27,447	8,082	4,415	468

Table A.17: Export (Quantity & Value) of dry fruits from Afghanistan in 2010 to 2019

Years	Almond		Raisin		Pistachios		Walnut		Dried fig		Dried apricot	
	MT	Lakh	MT	Lakh	MT	Lakh	MT	Lakh	MT	Lakh	MT	Lakh
2010	15,828	27,181	32,814	24,826	1,969	9,100	3,679	6,530	3,417	4498	1,467	571
2011	2,086	8,311	24,072	24,516	915	6,639	608	1,106	1,671	3,195	3,189	3,885
2012	3,277	12,530	28,413	31,909	1,067	8,251	383	809	2,107	2,988	3,111	3,602
2013	1,972	6,827	20,627	23,789	1,671	13,303	4,017	4,838	3,068	5,796	3,629	5,483
2014	4,768	19,453	35,958	49,192	3,007	23,084	2,253	4,486	7,122	15,204	5,325	8,185
2015	5,157	18,752	26,768	51,481	1,499	13,577	429	1,085	6,246	15,786	4,984	6,688
2016	9,036	21,674	19,172	38,046	1,069	8,735	3,024	5,725	7,585	22,753	2,374	4,108
2017	11,212	21,442	29,696	48,316	1,670	14,688	1,148	5,924	12,600	54,998	12,476	16,888
2018	12,871	22,889	76,311	64,389	2,707	23,351	822	3,283	9,593	46,311	43,693	26,558
2019	12,237	31,562	39,381	61,952	2,359	20,597	1,944	5,703	12,070	60,266	9,626	10,890

Table A.18: Afghanistan import (Quantity & Value) of major fresh fruits in 2010 to 2019

Years	Apple		Banana		Kiwi		Orange		Peach		Pineapple	
	MT	Lakh	MT	Lakh	MT	Lakh	MT	Lakh	MT	Lakh	MT	Lakh
2010	10,344	4,455	21,303	1,489	117	32	1,105	328	45	59	90	67
2011	1,206	462	27,692	1,557	209	58	938	285	110	149	37	28
2012	1,200	267	47,765	12,103	584	187	2,277	791	257	398	115	99
2013	211	97	82,363	4,846	1,193	420	1,095	417	260	442	100	95
2014	42,144	12,285	64,105	5,671	3,587	1,308	2,156	749	315	557	26	29
2015	38,644	11,651	1,42,518	17,351	1,225	19	2,194	1,078	197	366	36	41
2016	92,334	20,947	29,730	3,516	4,012	1,195	3,720	1,488	357	695	58	40
2017	5,309	549	1,32,929	8,944	884	104	11,681	4,962	100	189	112	83
2018	7,835	947	1,43,248	10,057	952	115	5,535	1,565	63	124	889	961
2019	9,347	3,005	1,18,039	28,157	760	94	3,897	1,090	274	570	822	939

Table A.19: Afghanistan import (Quantity & Value) of dry fruits in 2010 to 2019

Years	Almond		Cashewnut		Dates		Groundnut		Pistachios		Raisin	
	MT	Lakh	MT	Lakh	MT	Lakh	MT	Lakh	MT	Lakh	MT	Lakh
2010	193	512	110	476	6,505	3,518	100	207	441	1875	68	105
2011	230	614	195	419	6,037	3,185	218	467	733	3181	113	178
2012	191	579	213	524	8,557	2,401	269	608	1,140	5398	89	160
2013	249	884	301	811	692	243	345	776	1,305	7111	180	356
2014	201	776	298	851	17,850	14,623	312	453	1,987	11340	948	1,958
2015	257	1,003	529	1,746	2,066	808	349	640	1,650	10187	55	71
2016	1,154	4,371	642	2,965	19,113	10,940	913	1,633	2,116	14030	504	322
2017	2,696	9,706	958	5,449	15,176	4,704	1,965	1,945	1,924	13336	189	167
2018	1,419	2,135	2,346	15,191	19,261	6,298	7,605	5,988	1,800	11448	51	64
2019	5,105	23,258	1,795	10,139	17,850	7,676	7,009	8,293	1,145	7710	130	222

Table A.20: Total Agricultural trade (in the term of value) of India and Afghanistan, and the Average rate of US$ to INR in 2010 to 2019

Year	India total agricultural Trade		Afghanistan Total Agricultural Trade		Average Rates of US$ to INR (Reserve Bank of India)
	Total Agricultural Export (Lakh)	Total Agricultural import (Lakh)	Total Agricultural Export (Lakh)	Total Agricultural import (Lakh)	
2010	9133764	4736848	126714	557786	45.73
2011	14137799	7879800	116439	748349	46.67
2012	20395007	10532817	113084	833921	53.44
2013	24897928	11054558	170014	983307	58.60
2014	22079757	12999596	272500	1831974	61.03
2015	18383777	14368168	258598	1373618	64.15
2016	17799725	16181828	296650	1685279	67.20
2017	19812293	17839338	470738	2185279	65.12
2018	21023572	14829500	442168	2214813	68.39
2019	20632709	15271242	463181	1930184	70.42

Appendix-B

1. **India:** Indices of Revealed Comparative Advantage (RCA and RSCA) in export of Major fresh fruit and dry fruits in India in 2010 to 2019 are presented in following tables.

Table B.1: Revealed Comparative Advantage (RCA and RSCA) of Apple

Years	India Export Value		World Export Value		RCA	RSCA
	Apple	Total Ag	Apple	Total Ag		
2010	5974	9133764	2962665	496416598	0.11	-0.80
2011	6906	14137799	3336883	616748859	0.09	-0.83
2012	5574	20395007	3837901	715506989	0.05	-0.90
2013	8010	24897928	4704320	819168601	0.06	-0.89
2014	3493	22079757	4658278	867517050	0.03	-0.94
2015	4348	18383777	4532636	817865867	0.04	-0.92
2016	3625	17799725	4962744	865099032	0.04	-0.93
2017	2399	19812293	5074300	919068535	0.02	-0.96
2018	4021	21023572	5285276	994517992	0.04	-0.93
2019	6911	20632709	5104329	1017122063	0.07	-0.87

Table B.2: Revealed Comparative Advantage (RCA and RSCA) of Banana

Years	India Export Value		World Export Value		RCA	RSCA
	Banana	Total Ag	Banana	Total Ag		
2010	11453	9133764	3703087	496416598	0.17	-0.71
2011	8055	14137799	4131976	616748859	0.09	-0.84
2012	12589	20395007	4611432	715506989	0.10	-0.83
2013	15525	24897928	5677440	819168601	0.09	-0.83
2014	21238	22079757	6532105	867517050	0.13	-0.77
2015	32726	18383777	6165304	817865867	0.24	-0.62
2016	40546	17799725	7031067	865099032	0.28	-0.56
2017	31839	19812293	7653425	919068535	0.19	-0.68
2018	37913	21023572	8369826	994517992	0.21	-0.65
2019	53453	20632709	9399245	1017122063	0.28	-0.56

Table B.3: Revealed Comparative Advantage (RCA and RSCA) of Grape

Years	India Export Value		World Export Value		RCA	RSCA
	Grapes	Total Ag	Grapes	Total Ag		
2010	46853	9133763.64	2842147.2	496416598.4	0.90	-0.05
2011	36327	14137798.6	3261040.7	616748859.2	0.49	-0.35
2012	70172	20395007.2	3853649.3	715506988.7	0.64	-0.22
2013	113899	24897928.1	4625637.7	819168601.4	0.81	-0.10
2014	136542	22079757.2	4829091.6	867517050.4	1.11	0.05
2015	79033	18383777.1	4995371.2	817865866.7	0.70	-0.17
2016	147478	17799724.5	5270447.2	865099031.9	1.36	0.15
2017	179662	19812293.4	5602717.3	919068535.4	1.49	0.20
2018	188127	21023572.4	5979288.5	994517991.7	1.49	0.20
2019	216875	20632709.2	6275617	1017122063	1.70	0.26

Table B.4: Revealed Comparative Advantage (RCA and RSCA) of Mango

Years	India Export Value		World Export Value		RCA	RSCA
	Mangos	Total Ag	Mangos	Total Ag		
2010	58863	9133764	1156038	496416598	2.77	0.47
2011	63441	14137799	1371521	616748859	2.02	0.34
2012	55585	20395007	1464013	715506989	1.33	0.14
2013	41280	24897928	1689744	819168601	0.80	-0.11
2014	42998	22079757	2012358	867517050	0.84	-0.09
2015	36779	18383777	2001142	817865867	0.82	-0.10
2016	52761	17799725	2182767	865099032	1.17	0.08
2017	49180	19812293	2824858	919068535	0.81	-0.11
2018	46510	21023572	2896267	994517992	0.76	-0.14
2019	49659	20632709	3248286	1017122063	0.75	-0.14

Table B.5: Revealed Comparative Advantage (RCA and RSCA) of Papaya

Years	India Export Value		World Export Value		RCA	RSCA
	Papayas	Total Ag	Papayas	Total Ag		
2010	1726	9133763.64	85804	496416598.4	1.09	0.04
2011	2312	14137798.6	89425	616748859.2	1.13	0.06
2012	3196	20395007.2	112349	715506988.7	1.00	0.00
2013	3774	24897928.1	132872	819168601.4	0.93	-0.03
2014	3639	22079757.2	157016	867517050.4	0.91	-0.05
2015	5213	18383777.1	168336	817865866.7	1.38	0.16
2016	5408	17799724.5	182644	865099031.9	1.44	0.18
2017	4510	19812293.4	177514	919068535.4	1.18	0.08
2018	3396	21023572.4	200130	994517991.7	0.80	-0.11
2019	3180	20632709.2	208955	1017122063	0.75	-0.14

Table B.6: Revealed Comparative Advantage (RCA and RSCA) of Orange

Years	India Export Value		World Export Value		RCA	RSCA
	Orange	Total Ag	Orange	Total Ag		
2010	1735	9133764	2064938	496416598	0.05	-0.91
2011	5705	14137799	2248307	616748859	0.11	-0.80
2012	6825	20395007	2505358	715506989	0.10	-0.83
2013	4782	24897928	2847109	819168601	0.06	-0.90
2014	3157	22079757	2721272	867517050	0.05	-0.91
2015	4864	18383777	2850851	817865867	0.08	-0.86
2016	7014	17799725	3122955	865099032	0.11	-0.80
2017	5350	19812293	3331946	919068535	0.07	-0.86
2018	3021	21023572	3723165	994517992	0.04	-0.93
2019	14355	20632709	3412826	1017122063	0.21	-0.66

Table B.7: Revealed Comparative Advantage (RCA and RSCA) of Pineapple

Years	India Export Value		World Export Value		RCA	RSCA
	Pineapple	Total Ag	Pineapple	Total Ag		
2010	403	9133764	705668	496416598	0.03	-0.94
2011	599	14137799	806079	616748859	0.03	-0.94
2012	778	20395007	906828	715506989	0.03	-0.94
2013	1169	24897928	1036187	819168601	0.04	-0.93
2014	1747	22079757	1106464	867517050	0.06	-0.88
2015	1598	18383777	1084242	817865867	0.07	-0.88
2016	2123	17799725	1319777	865099032	0.08	-0.85
2017	3143	19812293	1374872	919068535	0.11	-0.81
2018	2511	21023572	1442840	994517992	0.08	-0.85
2019	2761	20632709	1574068	1017122063	0.09	-0.84

Table B.8: Revealed Comparative Advantage (RCA and RSCA) of Pomegranate

Years	India Export Value		World Export Value		RCA	RSCA
	Pomegranate	Total Ag	Pomegranate	Total Ag		
2010	7101	9133764	754959	496416598	0.51	-0.32
2011	14212	14137799	989301	616748859	0.63	-0.23
2012	23064	20395007	1154892	715506989	0.70	-0.18
2013	29082	24897928	1362984	819168601	0.70	-0.18
2014	32327	22079757	1293107	867517050	0.98	-0.01
2015	44701	18383777	1547954	817865867	1.28	0.12
2016	49261	17799725	2058787	865099032	1.16	0.08
2017	55985	19812293	2502958	919068535	1.04	0.02
2018	67671	21023572	2697910	994517992	1.19	0.09
2019	69913	20632709	2996006	1017122063	1.15	0.07

Table B.9: Revealed Comparative Advantage (RCA and RSCA) of Watermelon

Years	India Export Value		World Export Value		RCA	RSCA
	Watermelon	Total Ag	Watermelon	Total Ag		
2010	1450	9133764	584679	496416598	0.13	-0.76
2011	1733	14137799	543452	616748859	0.14	-0.76
2012	2081	20395007	672559	715506989	0.11	-0.80
2013	3509	24897928	799525	819168601	0.14	-0.75
2014	3321	22079757	943151	867517050	0.14	-0.76
2015	4442	18383777	905696	817865867	0.22	-0.64
2016	5314	17799725	1109929	865099032	0.23	-0.62
2017	5402	19812293	1102259	919068535	0.23	-0.63
2018	6579	21023572	1300531	994517992	0.24	-0.61
2019	6296	20632709	1312846	1017122063	0.24	-0.62

Table B.10: Revealed Comparative Advantage (RCA and RSCA) of Arecanut

Years	India Export Value		World Export Value		RCA	RSCA
	Arecanut	Total Ag	Arecanut	Total Ag		
2010	5469	9133764	76009	496416598	3.91	0.59
2011	3310	14137799	111705	616748859	1.29	0.13
2012	2919	20395007	132879	715506989	0.77	-0.13
2013	2945	24897928	195497	819168601	0.50	-0.34
2014	4937	22079757	256120	867517050	0.76	-0.14
2015	7355	18383777	323944	817865867	1.01	0.01
2016	15060	17799725	299651	865099032	2.44	0.42
2017	6771	19812293	314981	919068535	1.00	0.00
2018	6038	21023572	398084	994517992	0.72	-0.16
2019	6342	20632709	383743	1017122063	0.81	-0.10

Table B.11: Revealed Comparative Advantage (RCA and RSCA) of Cashewnut

Years	India Export Value		World Export Value		RCA	RSCA
	Cashewnut	Total Ag	Cashewnut	Total Ag		
2010	257824	9133764	1260743	496416598	11.11	0.83
2011	418273	14137799	1940364	616748859	9.40	0.81
2012	411436	20395007	2271425	715506989	6.35	0.73
2013	542495	24897928	2242790	819168601	7.96	0.78
2014	539038	22079757	3265056	867517050	6.49	0.73
2015	523118	18383777	3698975	817865867	6.29	0.73
2016	499220	17799725	4958300	865099032	4.89	0.66
2017	624186	19812293	5626398	919068535	5.15	0.67
2018	470702	21023572	5315683	994517992	4.19	0.61
2019	412052	20632709	4690469	1017122063	4.33	0.62

Table B.12: Revealed Comparative Advantage (RCA and RSCA) of Dried Figs

Years	India Export Value		World Export Value		RCA	RSCA
	Dried Figs	Total Ag	Dried Figs	Total Ag		
2010	14969	9133764	134236	496416598	6.06	0.72
2011	18733	14137799	123092	616748859	6.64	0.74
2012	7179	20395007	164796	715506989	1.53	0.21
2013	39629	24897928	212115	819168601	6.15	0.72
2014	41037	22079757	292049	867517050	5.52	0.69
2015	49873	18383777	254620	817865867	8.71	0.79
2016	40101	17799725	281955	865099032	6.91	0.75
2017	65953	19812293	332559	919068535	9.20	0.80
2018	55545	21023572	342693	994517992	7.67	0.77
2019	67690	20632709	337028	1017122063	9.90	0.82

Table B.13: Revealed Comparative Advantage (RCA and RSCA) of Raisin

Years	India Export Value		World Export Value		RCA	RSCA
	Raisin	Total Ag	Raisin	Total Ag		
2010	2972	9133764	772877	496416598	0.21	-0.65
2011	5620	14137799	881118	616748859	0.28	-0.56
2012	28508	20395007	960976	715506989	1.04	0.02
2013	24926	24897928	1051530	819168601	0.78	-0.12
2014	13973	22079757	1153793	867517050	0.48	-0.36
2015	17003	18383777	1010618	817865867	0.75	-0.14
2016	29912	17799725	1185661	865099032	1.23	0.10
2017	22016	19812293	1019072	919068535	1.00	0.00
2018	29444	21023572	1117035	994517992	1.25	0.11
2019	26552	20632709	1295381	1017122063	1.01	0.01

Table B.14: Revealed Comparative Advantage (RCA and RSCA) of Walnut

Years	India Export Value		World Export Value		RCA	RSCA
	Walnut	Total Ag	Walnut	Total Ag		
2010	18043	9133764	792546	496416598	1.24	0.11
2011	20800	14137799	1077050	616748859	0.84	-0.09
2012	21128	20395007	1315138	715506989	0.56	-0.28
2013	32945	24897928	1622196	819168601	0.67	-0.20
2014	20278	22079757	1935101	867517050	0.41	-0.42
2015	13411	18383777	2040935	817865867	0.29	-0.55
2016	6664	17799725	1998197	865099032	0.16	-0.72
2017	9733	19812293	2259780	919068535	0.20	-0.67
2018	9332	21023572	2401263	994517992	0.18	-0.69
2019	5539	20632709	2680917	1017122063	0.10	-0.82

Table B.15: Revealed Comparative Advantage (RCA and RSCA) of Peanut

Years	India Export Value		World Export Value		RCA	RSCA
	Peanut	Total Ag	Peanut	Total Ag		
2010	1324	9133764	627764	496416598	0.11	-0.79
2011	5538	14137799	1074518	616748859	0.22	-0.63
2012	4184	20395007	1309679	715506989	0.11	-0.80
2013	5924	24897928	1286469	819168601	0.15	-0.74
2014	10510	22079757	1217113	867517050	0.34	-0.49
2015	17873	18383777	1302373	817865867	0.61	-0.24
2016	20149	17799725	1522070	865099032	0.64	-0.22
2017	31584	19812293	1503054	919068535	0.97	-0.01
2018	27051	21023572	1503319	994517992	0.85	-0.08
2019	41437	20632709	1981067	1017122063	1.03	0.02

2. Afghanistan: Indices of Revealed Comparative Advantage (RCA and RSCA) in export of Major fresh fruit and dry fruits in Afghanistan in 2010 to 2019 are presented in following tables.

Table B.16: Revealed Comparative Advantage (RCA and RSCA) of Apple

Years	AFG Export Value		World Export Value		RCA	RSCA
	Apple	Total Ag	Apple	Total Ag		
2010	2141	126714	2962665	496416598	2.83	0.48
2011	336	116439	3336883	616748859	0.53	-0.30
2012	642	113084	3837901	715506989	1.06	0.03
2013	4506	170014	4704320	819168601	4.61	0.64
2014	2118	272500	4658278	867517050	1.45	0.18
2015	10212	258598	4532636	817865867	7.13	0.75
2016	3980	296650	4962744	865099032	2.34	0.40
2017	9185	470738	5074300	919068535	3.53	0.56
2018	7471	442168	5285276	994517992	3.18	0.52
2019	7192	463181	5104329	1017122063	3.09	0.51

Table B.17: Revealed Comparative Advantage (RCA and RSCA) of Apricot

Years	AFG Export Value		World Export Value		RCA	RSCA
	Apricot	Total Ag	Apricot	Total Ag		
2010	75	126714	176451	496416598	1.68	0.25
2011	541	116439	189684	616748859	15.12	0.88
2012	734	113084	241331	715506989	19.24	0.90
2013	928	170014	315475	819168601	14.18	0.87
2014	3398	272500	286132	867517050	37.81	0.95
2015	2048	258598	289445	817865867	22.38	0.91
2016	3599	296650	285752	865099032	36.73	0.95
2017	5043	470738	301357	919068535	32.67	0.94
2018	10986	442168	344040	994517992	71.82	0.97
2019	8082	463181	342508	1017122063	51.82	0.96

Table B.18: Revealed Comparative Advantage (RCA and RSCA) of Apricot

Years	AFG Export Value		World Export Value		RCA	RSCA
	Grapes	Total Ag	Grapes	Total Ag		
2010	3133	126714	2842147	496416598	4.32	0.62
2011	4590	116439	3261041	616748859	7.45	0.76
2012	2296	113084	3853649	715506989	3.77	0.58
2013	989	170014	4625638	819168601	1.03	0.01
2014	4754	272500	4829092	867517050	3.13	0.52
2015	4130	258598	4995371	817865867	2.61	0.45
2016	26763	296650	5270447	865099032	14.81	0.87
2017	58006	470738	5602717	919068535	20.21	0.91
2018	43553	442168	5979289	994517992	16.38	0.88
2019	29741	463181	6275617	1017122063	10.41	0.82

Table B.19: Revealed Comparative Advantage (RCA and RSCA) of Pomegranate

Years	AFG Export Value		World Export Value		RCA	RSCA
	Pomegranate	Total Ag	Pomegranate	Total Ag		
2010	3178	126714	754959	496416598	16.49	0.89
2011	660	116439	989301	616748859	3.53	0.56
2012	440	113084	1154892	715506989	2.41	0.41
2013	903	170014	1362984	819168601	3.19	0.52
2014	4024	272500	1293107	867517050	9.91	0.82
2015	3614	258598	1547954	817865867	7.38	0.76
2016	3260	296650	2058787	865099032	4.62	0.64
2017	5903	470738	2502958	919068535	4.60	0.64
2018	10782	442168	2697910	994517992	8.99	0.80
2019	10385	463181	2996006	1017122063	7.61	0.77

Table B.20: Revealed Comparative Advantage (RCA and RSCA) of Melon

Years	AFG Export Value		World Export Value		RCA	RSCA
	Melon	Total Ag	Melon	Total Ag		
2010	1288	126714	636805	496416598	7.92	0.78
2011	6718	116439	639237	616748859	55.67	0.96
2012	332	113084	772716	715506989	2.72	0.46
2013	131	170014	939651	819168601	0.67	-0.20
2014	1781	272500	1014604	867517050	5.59	0.70
2015	2934	258598	1014841	817865867	9.14	0.80
2016	748	296650	1123522	865099032	1.94	0.32
2017	477	470738	1073081	919068535	0.87	-0.07
2018	976	442168	1118487	994517992	1.96	0.32
2019	1849	463181	1135837	1017122063	3.58	0.56

Table B.20: Revealed Comparative Advantage (RCA and RSCA) of Watermelon

Years	AFG Export Value		World Export Value		RCA	RSCA
	Watermelon	Total Ag	Watermelon	Total Ag		
2010	35	126714	584679	496416598	0.23	-0.62
2011	57	116439	543452	616748859	0.56	-0.28
2012	101	113084	672559	715506989	0.95	-0.03
2013	65	170014	799525	819168601	0.39	-0.44
2014	449	272500	943151	867517050	1.51	0.20
2015	387	258598	905696	817865867	1.35	0.15
2016	929	296650	1109929	865099032	2.44	0.42
2017	886	470738	1102259	919068535	1.57	0.22
2018	182	442168	1300531	994517992	0.31	-0.52
2019	468	463181	1312846	1017122063	0.78	-0.12

Table B.21: Revealed Comparative Advantage (RCA and RSCA) of Almond

Years	AFG Export Value		World Export Value		RCA	RSCA
	Almond	Total Ag	Almond	Total Ag		
2010	27181	126714	1512357	496416598	70.41	0.97
2011	8311	116439	1858647	616748859	23.69	0.92
2012	12530	113084	2518647	715506989	31.48	0.94
2013	6827	170014	3458419	819168601	9.51	0.81
2014	19453	272500	4068984	867517050	15.22	0.88
2015	18752	258598	4838523	817865867	12.26	0.85
2016	21674	296650	4424065	865099032	14.29	0.87
2017	21442	470738	4220439	919068535	9.92	0.82
2018	22889	442168	4590846	994517992	11.21	0.84
2019	31562	463181	5285433	1017122063	13.11	0.86

Table B.22: Revealed Comparative Advantage (RCA and RSCA) of Pistachio

Years	AFG Export Value		World Export Value		RCA	RSCA
	pistachios	Total Ag	pistachios	Total Ag		
2010	9100	126714	1164936	496416598	30.60	0.94
2011	6639	116439	1178841	616748859	29.83	0.94
2012	8251	113084	1247001	715506989	41.86	0.95
2013	13303	170014	1332035	819168601	48.12	0.96
2014	23084	272500	2140011	867517050	34.34	0.94
2015	13577	258598	1579916	817865867	27.18	0.93
2016	8735	296650	2288002	865099032	11.13	0.84
2017	14688	470738	2249129	919068535	12.75	0.85
2018	23351	442168	2009809	994517992	26.13	0.93
2019	20597	463181	2498466	1017122063	18.10	0.90

Table B.23: Revealed Comparative Advantage (RCA and RSCA) of Walnut

Years	AFG Export Value		World Export Value		RCA	RSCA
	Walnuts	Total Ag	Walnuts	Total Ag		
2010	6530	126714	792546	496416598	32.28	0.94
2011	1106	116439	1077050	616748859	5.44	0.69
2012	809	113084	1315138	715506989	3.89	0.59
2013	4838	170014	1622196	819168601	14.37	0.87
2014	4486	272500	1935101	867517050	7.38	0.76
2015	1085	258598	2040935	817865867	1.68	0.25
2016	5725	296650	1998197	865099032	8.36	0.79
2017	5924	470738	2259780	919068535	5.12	0.67
2018	3283	442168	2401263	994517992	3.07	0.51
2019	5703	463181	2680917	1017122063	4.67	0.65

Table B.24: Revealed Comparative Advantage (RCA and RSCA) of Raisin

Years	AFG Export Value		World Export Value		RCA	RSCA
	Raisins	Total Ag	Raisins	Total Ag		
2010	24826	126714	772877	496416598	125.84	0.98
2011	24516	116439	881118	616748859	147.38	0.99
2012	31909	113084	960976	715506989	210.09	0.99
2013	23789	170014	1051530	819168601	109.00	0.98
2014	49192	272500	1153793	867517050	135.73	0.99
2015	51481	258598	1010618	817865867	161.11	0.99
2016	38046	296650	1185661	865099032	93.58	0.98
2017	48316	470738	1019072	919068535	92.57	0.98
2018	64389	442168	1117035	994517992	129.65	0.98
2019	61952	463181	1295381	1017122063	105.02	0.98

Table B.25: Revealed Comparative Advantage (RCA and RSCA) of Dried figs

Years	AFG Export Value		World Export Value		RCA	RSCA
	Dried Figs	Total Ag	Dried Figs	Total Ag		
2010	4498	126714	134236	496416598	131.26	0.98
2011	3195	116439	123092	616748859	137.49	0.99
2012	2988	113084	164796	715506989	114.71	0.98
2013	5796	170014	212115	819168601	131.66	0.98
2014	15204	272500	292049	867517050	165.73	0.99
2015	15786	258598	254620	817865867	196.08	0.99
2016	22753	296650	281955	865099032	235.33	0.99
2017	54998	470738	332559	919068535	322.89	0.99
2018	46311	442168	342693	994517992	303.95	0.99
2019	60266	463181	337028	1017122063	392.67	0.99

Table B.26: Revealed Comparative Advantage (RCA and RSCA) of Dried Apricot

Years	AFG Export Value		World Export Value		RCA	RSCA
	Apricot dried	Total Ag	Apricot dried	Total Ag		
2010	571	126714	196382	496416598	11.38	0.84
2011	3885	116439	210150	616748859	97.91	0.98
2012	3602	113084	204375	715506989	111.52	0.98
2013	5483	170014	237547	819168601	111.21	0.98
2014	8185	272500	283997s	867517050	91.76	0.98
2015	6688	258598	262007	817865867	80.74	0.98
2016	4108	296650	253552	865099032	47.24	0.96
2017	16888	470738	247825	919068535	133.05	0.99
2018	26558	442168	253116	994517992	236.00	0.99
2019	10890	463181	245610	1017122063	97.37	0.98

ABSTRACT

Title of Thesis	:	**Export and Import Performance of Major Fruits and Dry Fruits in India vis – a – vis Afghanistan**
Name of Degree Holder	:	Sediqullah Zahid
Admission Number	:	2019A09M
Title of degree	:	Master of Science
Name and Address of Major Advisor	:	Dr. Dalip Kumar Bishnoi Assistant Scientist (Department of Agricultural Economics)
Degree awarding University/Institute	:	CCS Haryana Agricultural University, Hisar
Year of Award of Degree	:	2022
Major Subject	:	Agricultural Economics
Total No. of Pages in thesis	:	98+ iv + XVIII
Number of Words in abstract	:	306

Keywords: Cashewnut, India, Afghanistan, Grape, Mango , etc.

The Study was carried out in India and Afghanistan during the year 2019-2022. The study was based on the secondary data collected from various published and unpublished sources. Secondary data related to export and import of major fruits and dry fruits were collected from the year 2010 to 2019. Grape and Cashewnut had the highest export among all major fresh and dry fruits exported from India, respectively. Whereas, Apple and Cashewnut had the highest import among all major fresh fruits imported to India. Similarly, Grape and Raisin had the highest export among all major fresh as well as dry fruits exported from Afghanistan. While, Banana and Dates had the highest import among all imported fresh and dry fruits to Afghanistan. Grapes and Mango had the absolute highest relative comparative advantage of export among all other major fruits for India. In the case of dry fruits, India had the absolute comparative advantage in the export of cashew nuts and dried figs during the period 2010 to 2019. Similarly, Afghanistan had highest relative comparative advantage in export of Apricot and Dried fig among all the fresh and dry fruits, respectively. Insufficient storages and transportation facilities, excess uses of pesticides and insufficient institutional support, inadequate infra-structure facilities, lack of standards for post-harvest processing, inefficient size of operation, variability in supply and quality, insufficient or inappropriate distribution and storage facilities, poor market access, lack of appropriate management of water resources, shortage of farms and research centres**,** lack of credit facilities**,** non-stability in political situation, lack of technical knowhow, lack of professional staff especially in agricultural sector, geographical location (land lock country), lack of incentives for investors, civil conflicts and security crisis, lack of training and communication facilities, grading and sorting facilities, security issues and misunderstanding of the free market economy were observed some major constraints in both the nations .

MAJOR ADVISOR **SIGNATURE OF STUDENT**

HEAD OF THE DEPARTMENT

CURRICULUM VITAE

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Degree	Institution	Year of Passing	Percentage / OGPA	Subjects
M.Sc. (Agricultural Economics)	COA, CCS HAU, Hisar	2022	66.43	**Major:** Agricultural Economics **Minor:** Statistics
B.Sc. (Hons.) Agriculture	Nangrahar University	2016	74.16%	All Agricultural Subjects
High Secondary	Ibrahim Khalilullah High School	2011	85.09%	English, Mathematics, Physics, Chemistry, Biology and etc.

Scholarship/ Stipend/ Fellowship, any other financial assistance received	:	India-Afghanistan fellowship (2019-20) by the Indian Council of Agricultural Research (ICAR) during the study period for pursuing M.Sc. (Agricultural Economics)
Co-Curricular activities	:	Reading books, internet browsing, and Sports

Work and experience

- I have worked as manager of monitoring and evaluation in Agriculture directorate of Paktia province from 2017 to 2019.
- I have participated various training courses viz; basics of administration and management, use of new technology in Agriculture, control of plant pests and diseases, monitoring of agricultural projects, public health, etc which was launched by USAID, NHLP, ICARDA, and FAO organizations under The rules of ministry of agriculture, irrigation & livestock, government of Afghanistan.

(Sediqullah Zahid)

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"I, **Sediqullah Zahid,** Admission No. **2019A09M**, hereby undertake that I give copy right of my thesis entitled, **"Export and Import Performance of Major Fruits and Dry Fruits in India vis – a – vis Afghanistan"** to the Chaudhary Charan Singh Haryana Agricultural University, Hisar.

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Signature of student