Market Access Plan for Pomegranate

TA-6782 IND: Enhancing Market Linkages for Farmer Producer Organizations

March 2023

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1 Crop Background

Pomegranate (Punica granatum) plant belongs to the Punicaceae family. It has sweet fruits with presence of thick, inedible red skin. Inside it are present hundreds of juicy seeds. Pomegranate has numerous nutritional and medicinal properties due to which it is also termed as a 'Super Food'. The calorific value of the pomegranate fruit is 65. It is a rich source of sodium and contains a good amount of riboflavin, thiamin, niacin, vitamin C, calcium and phosphorous. Protein and fat contents are negligible. The presence of antioxidants in pomegranates help to improve the immune system in body.

The commercial importance of pomegranates is increasing every year as it has applications in health, pharmaceutical and cosmetic industries. The presence of wide range of value-added products is increasing the acceptability amongst consumers and industrialists alike.

1.1 Global Scenario

1.1.1 Production

Pomegranate cultivation is expanding across the world. Pomegranates are widely cultivated throughout central Asia, the Middle East and the Mediterranean region, drier parts of North and South America and some parts of Europe (majorly Spain, and to some extent in Italy and Greece). India and Iran are the largest producers worldwide. Global production figures for pomegranate are difficult to estimate as it is classified under HS code 08109010 along with other fresh fruits. World trade data (import & export), global statistics of pomegranates (area, production, productivity) are thus hard to project for individual country.

1.1.2 Important Varieties

Spain is the largest pomegranate producer in Europe. Its principal variety is Mollar de Elche. It has a 'protected denomination of origin' (PDO) due to its unique sweet taste with cream red colour. Other varieties grown in Spain are Mollar de Valencia and Wonderful. Varieties grown in Turkey include Caner, Hicaz and Wonderful. Wonderful is also an important variety of Egypt.

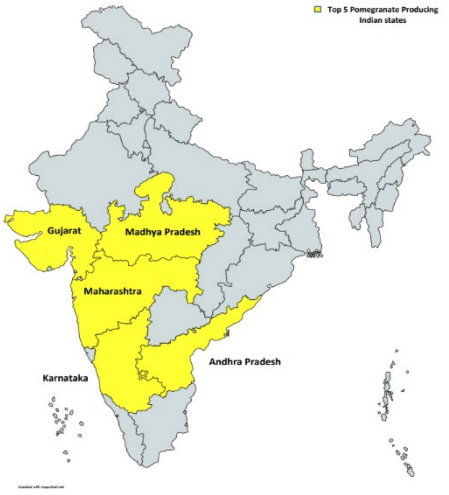
1.2 Indian Scenario

1.2.1 Production

India is the largest producer of pomegranates in the world. The peak season of pomegranates in India is from February to May. With the increase in cultivation across various states, this period of harvest is also increasing gradually.

In 2020-21, pomegranates constituted 3.2% of fruit production in India. It provides a good livelihood opportunity to farmers in regions receiving less rainfall in country.

Table 1: National area and production data of pomegranate (2018-19 to 2021-22)		
Year	**Production (MT)**	**Area (Ha)**
2018-19	29,15,000	2,53,000
2019-20	23,15,000	2,61,000
2020-21	32,71,000	2,88,000
2021-22	31,88,000	2,78,000
Source: Dept of Agriculture & Farmer Welfare, Govt. of India		



Pomegranate demand in domestic and international market has led to increase in crop area and production. The crop is suitable for small land holding farmers and grows well in regions having arid and semi-arid climate. It is an ideal crop to replace subsistence farming in these regions. It also has potential to utilize and develop wastelands and provide nutritional security to the common man.

Pomegranate production is centered in the states of Maharashtra, Gujarat, Karnataka, Andhra Pradesh (AP) and Madhya Pradesh (MP). Maharashtra is the leading producer of pomegranates and contributes to approximately 60% of national production.

Table 2: Top pomegranate producing states of India (2020-21)			
State	**Area (Ha)**	**Production (MT)**	**Productivity (MT/Ha)**
Maharashtra	1,63,790	17,17,140	10.4
Gujarat	43,560	6,69,760	15.3
Karnataka	26,400	2,76,580	10.4
Andhra Pradesh	13,300	1,99,470	15
Madhya Pradesh	8,560	1,02,830	12
Source: Dept of Agriculture & Farmer Welfare, Government of India			

Pomegranates are cultivated throughout India due to its higher tolerance of adverse temperature and relative humidity conditions. Coupled with the crop hardiness, availability of high yielding hybrids has accelerated production in India.

Table 3: Important production clusters of pomegranates in India		
States	**Districts**	**Blocks**
Gujarat	Bhavnagar	Botad, Gadhda, Valbhipur, Umrala, Mandir, Gariadhar, Palitana, Talaja, Chogha, Vaibhipur
	Ahmedabad	Mandal, Rampura, Samand, Bavia, Dholka, Dhandhkulla, Ranapur
	Sabarkantha	Vijarnagar, Khedbrahma, Vadali, Idar, Bhiloda, Talod, Dhansura, Bayad, Malpur, Meghraj, Bhiloda
Karnataka	Bijapur	Indi, Sindgi, Basavna Bagevadi, Muddebihal, Tikota
	Belgaum	Athni, Arkali, Chikodi, Mukeri, Bailhongal, Ramdurg
	Bagalkot	Jamkhandi,Mudhol,Hungund,Badami
Andhra Pradesh	Anantpur	Guntakal, Gooty, Rayalacheruve, Uravakonda, Kanekallu, Rayadurg, Kalyandurg, Kambadur, Manakasira, Nallamada
Source: Agricultural and Processed Food Products Export Development Authority (APEDA)		

Important pomegranate varieties[1]:

Bhagwa, Arakta, Ganesh, Ruby, Mridula, Jyoti and Dholka are the widely grown pomegranate varieties in India. New hybrids are being developed by Mahatma Phule Krishi Vidyapeeth (MPKV), Rahuri and Indian Institute of Horticultural Research (IIHR), Bangalore to increase the production further.

1. **Bhagwa:**
   The most prominent and widely cultivated pomegranate variety is Bhagwa. It is suitable for long distance transportation. Gives high yield of 30-35 kg/tree and is grown in Maharashtra, Gujarat, Karnataka, AP, MP.

2. **Arakta:**
   Presently grown in Maharashtra. It has characteristics suitable for processing industry. It has dark red skin and presence of bold red arils which are attractive in visual appeal.

3. **Ganesh:**
   It is grown in Maharashtra and Karnataka. Yield is 8-10 kg per tree. It has a large rind with pinkish yellow arils having soft seeds

4. **Ruby:**
   It is a multiple hybrid of pomegranate developed for aril color and seed mellowness. The mature fruits resemble in size and shape the fruits of Ganesh. The skin color of Ruby is reddish brown with green streaks. This variety is cultivated in Karnataka.

[1] *Data & image source: National Horticultural Board (NHB), IIHR, MPKV*

5. **Mridula:**

This variety has all the characters of the Ganesh variety except the arils are dark red in colour. The colour of the arils is dark red to pink in colour. The average fruit weight is 250-300 grams. This variety is cultivated in Karnataka.

6. **Jyoti:**

This variety was developed at IIHR, Bangalore. The fruits are large with attractive color having dark red arils. The seeds are very soft with high pulp and juice contents. This variety is cultivated in Karnataka.

1.2.2 Trade – International

India is the largest exporter of pomegranates in the world. Indian pomegranate seeds are softer as compared to other counties which makes them popular in importing nations. Indian pomegranate season has a peak from February to May, but its harvest is received throughout the year. This assures a yearlong supply. Indian exports quantity has increased over the past 3 years, but the value accrued has been variable due to fluctuating prices in international markets.

Table 4: Indian pomegranate exports data (2019-20 to 2021-22)			
S. No.	**Year**	**Quantity (MT)**	**Value (Cr ₹)**
1	2019-20	80,548	688
2	2020-21	67,977	517
3	2021-22	99,043	689
Source: Directorate General of Commercial Intelligence and Statistics (DGCIS)			

The top importers for Indian pomegranate are mostly Indian sub-continent and Middle Eastern nations. India has a huge potential to export to European countries which must be explored. The detailed analysis of the same has been provided in the Marketing Strategy section of this document.

Table 5: Top export destinations for Indian pomegranates (2021)			
S. No.	**Country**	**Quantity (MT)**	**Value (Cr ₹)**
1	Bangladesh	63,371	280
2	UAE	15,773	192
3	Nepal	10,448	46
4	Netherlands	1,302	37
5	Qatar	2,174	29
6	Saudi Arabia	1,234	16
Source: DGCIS & APEDA			

1.2.3 Trade – Domestic

Domestic trade of pomegranate in India is generally driven by the decentralized mandi system. Depending on the grade of fruit, different prices are decided, and trade is facilitated between the trader and the farmer.

Table 6: Mandi-wise pomegranate arrivals and prices (2021)				
Markets (2021)	Arrival (MT)	Modal Price (₹/Quintal)		
		Large Grade	Medium Grade	Small Grade
Azadpur (Delhi)	85,241.00		7,292.72	
Binny Mill (F&V) (Bangalore, Karnataka)	39,139.00	13,098.60	-	6,917.69
Rahata (Maharashtra)	31,558.00		4,391.23	
Solapur (Maharashtra)	30,525.00		3,299.33	
Mechua (Kolkata, West Bengal)	28,566.90	11,818.60	10,585.88	7,845.78
Nashik (Maharashtra)	23,033.00		6,945.77	
Mumbai (Maharashtra)	18,130.00		9,160.98	
Sangola (Solapur, Maharashtra)	17,345.00		4,161.32	
Lucknow (Uttar Pradesh)	15,698.70	5,400.00	5,980.74	
Aatpadi (Sangli, Maharashtra)	15,032.00		10,351.14	
Pandharpur (Maharashtra)	13,209.00		5,815.32	
Kanpur (Uttar Pradesh)	12,574.00	6,175.00	6,046.21	
Source: Agmarknet				

1.3 Crop background: Maharashtra Scenario

1.3.1 Production Overview

Maharashtra has the highest pomegranate production in India. It accounts for over 60% of national output. The area under cultivation has increased significantly over the past 5 years. With the introduction of high yielding and better hybrids the production is bound to increase in the upcoming years.

Table 7: Maharashtra pomegranate production data (2017-18 to 2021-22)				
No.	Year	Production (MT)	Area (Ha)	Productivity (MT/ Ha)
1	2017-18	17,89,460	1,47,910	12.10
2	2018-19	17,97,610	1,60,720	11.18
3	2019-20	17,06,470	1,65,160	10.33
4	2020-21	17,95,320	1,71,020	10.49
5	2021-22	17,63,990	1,66,200	10.61
Source: National Horticulture Board (NHB), India				

1.3.2 District-wise production overview

Western Maharashtra region has a dominant position in pomegranate production in the state. Nashik being the highest producer of pomegranates in Maharashtra. Solapur has the highest area under cultivation, but its productivity is much lower than that of Nashik.

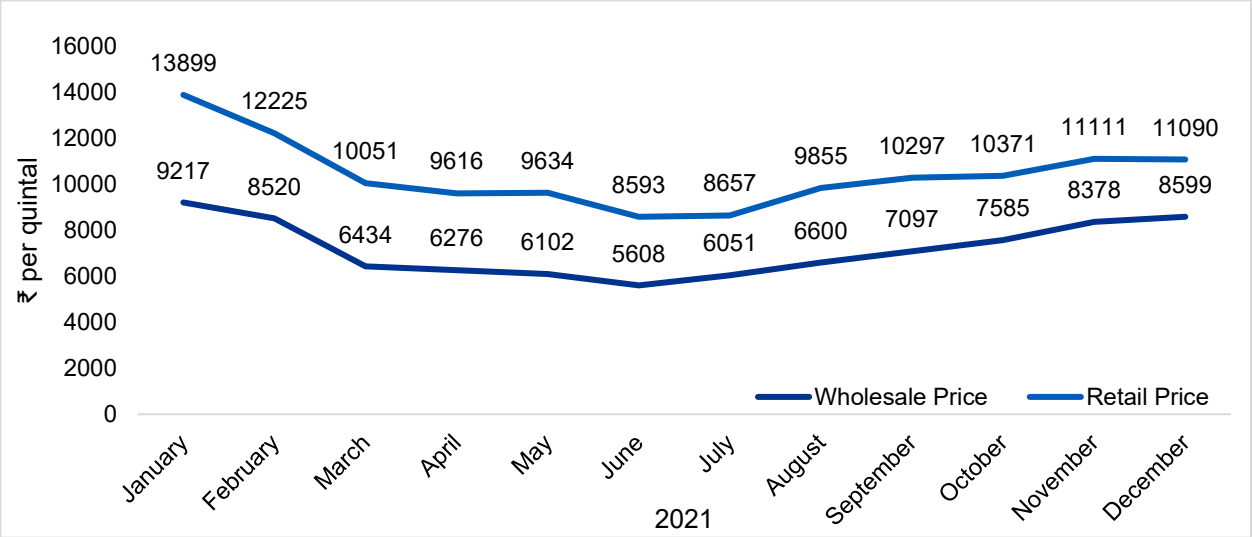
Table 8: District-wise pomegranate production in Maharashtra (2021)			
District	**Production (MT)**	**Area (Ha)**	**Productivity (MT/ Ha)**
Nashik	5,40,020	31,760	17.00
Ahmednagar	3,57,090	37,070	9.63
Solapur	3,31,630	47,370	7.00
Pune	1,50,880	15,080	10.00
Sangli	1,00,560	6,280	16.00
Total	17,63,990	1,66,200	10.61
Source: NHB			

1.3.3 Maharashtra Arrivals & Pricing Overview

Pomegranate is cultivated in different parts of the state owing to its broad range of tolerance to temperature and relative humidity factors. Pomegranate is commercially cultivated in Solapur, Sangli, Nasik, Ahmednagar, Pune, Dhule, Aurangabad, Satara, Osmanabad and Latur districts of Maharashtra. Below table presents the details of catchment areas / markets of pomegranate in Maharashtra.

Table 9: Month-wise pomegranate arrivals in Maharashtra mandis (2021)				
Month	**Mumbai (MT)**	**Pune (MT)**	**Nagpur (MT)**	**Nashik (MT)**
January	918	1293	507	212
February	1450	1266	1025	127
March	1528	1235	635	0
April	65098	551	520	0
May	975	1153	1262	0
June	1816	1251	4492	0
July	2592	2254	3435	2037
August	2395	2638	2900	5487
September	1818	3755	1120	3879
October	1430	4194	1549	2745
November	837	5105	630	1488
December	1639	4884	339	930
Total	82,496	29,579	18,414	15,975
Source: NHB				

Below graph presents month-wise average wholesale and retail price for pomegranate across major mandis in Maharashtra for the year 2021. The average Wholesale price was recorded to be ₹ 7,206 per quintal and Retail price is ₹ 10,450 per quintal.



1.3.4 Value Chain Overview

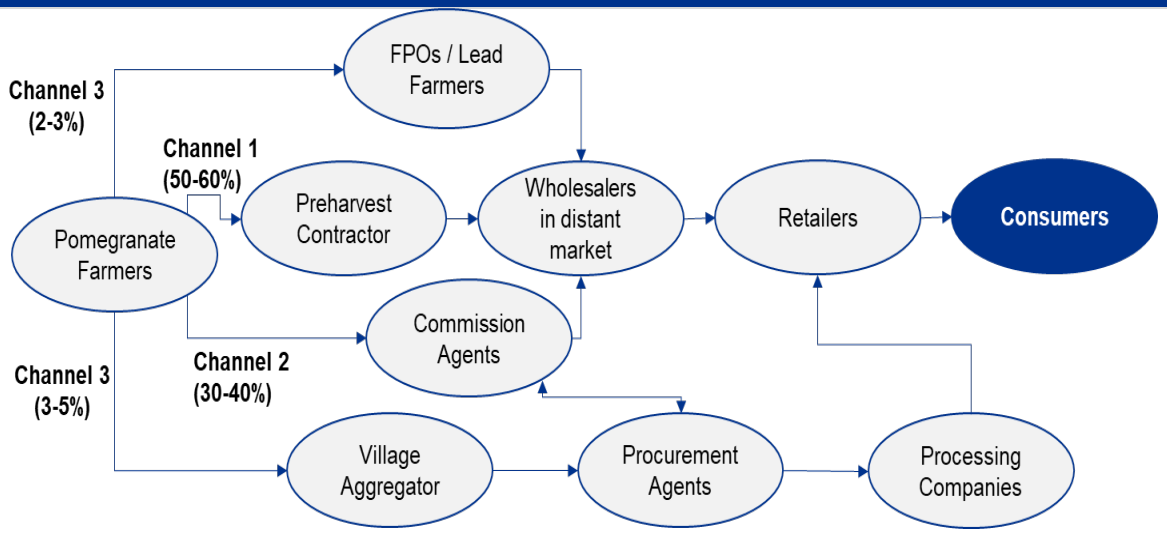
There are multiple marketing channels for pomegranate to reach consumers from farmers. Pre-harvest contractor route is the major channel for farmers to sell fruits from their orchards. The commodity flow through these marketing channels is detailed in the figure below.

Figure 1: Common marketing channels for pomegranate

Channel 1	Farmer ► Post-harvest contractor / commission agent ► Wholesaler in distant market (as Delhi / Lucknow / Chandigarh / Bihar / Kolkata) ► Retailer ► Consumer
Channel 2	Farmer ► Village aggregator ► Procurement agent ► Processing companies ► Wholesaler / retailer in distant market ► Consumers
Channel 3	Farmers ► Farmer Producer Organizations / lead farmers ► Commission agents / wholesaler in local or distant market ► Consumers

Source: Mapping Study Report on Agribusiness Industry & Value Chain Players in the State of Maharashtra conducted under MAGNET Project (2018-19)

Figure 2: Structure of pomegranate value chain



Source: Mapping Study Report on Agribusiness Industry & Value Chain Players in the State of Maharashtra conducted under MAGNET Project (2018-19)

2 Marketing Strategy

Individual farmers and FPOs face issues in accessing profitable markets for their produce. Key challenges for them are their remote locations, high transportation costs, limited market information / knowledge of requirements, and the lack of business skills. The following market strategy has been prepared with a focus on providing information that helps FPOs in accessing reliable and profitable markets, while ensuring their produce meets market standards. In addition, it is envisaged that the FPOs have better bargaining power, some of the value chain activities are shifted towards them and there is a win-win situation for both FPOs and associated value chain actors / market players. Also, while providing information on opportunities, associated risks have also been highlighted. Prior to a detailed market segment-wise strategy, some of the common and cross-cutting interventions that are required at the end of FPOs for better market access are given below:

Commodity resource mapping and Know Your Farmers (KYF): FPOs should keep information on acreage of cultivable land under different crops, approximate marketable crop available with the farmers in the season, etc. This will help FPOs to have an idea of the volumes to be handled in the season and plan to effectively market their produce eventually.

Aggregate large volumes of produce: FPOs can establish long-term business relationship only if they are able to consistently supply sufficient quantity of produce, as per the buyer requirements. FPOs can increase procurement catchment area to consistently meet minimum requirement quantities.

Flexibility with payment terms: Many market segment function on credit cycle, which can vary from as low as 5-7 days to as high as 30-60 days. FPOs should have sufficient working capital to made credit cycle and farmer payments.

Have good market intelligence: FPOs should have good market intelligence to decide on store / sell decisions and to determine which market to send the produce to. Market intelligence can be collected through online sources such as Government data and news articles, and through on-ground network of contacts in different parts of the country. Keeping a tab on market situations in target export markets will help FPOs in market entry and expansion.

Appointment of manager: FPOs can appoint a manager for its market linkage business. This will help in better sales planning, coordination with buyers for purchase and payment timelines. It can also appoint a manager for procurement activities. For FPOs to expand its business and supply to more buyers, it is necessary to have strong procurement, and appointment of manager can help in establishing the same.

Diversify supply options: All types of markets and market players come with both opportunity and risks for FPOs. This document also details on potential risks that FPOs might face in each market. To mitigate risks, FPOs should ensure that it deals in multiple markets and with multiple market players in each market. In addition, to get quality commensurate pricing, FPOs need to supply each market with its required quality of produce.

This section details out the strategy that the FPOs can adopt to supply pomegranates in the major market segments, namely, 1) Export Markets, 2) Domestic Markets, 3) Organized retail and eCommerce, and 4) Processors. Key components of this section are:

2.1 Exports

Pomegranate is globally recognized as a “Super-food” owing to its nutritious characteristics, and thus, its demand is seeing a world-wide rise. The producing countries have reportedly increased the acreage but lack of supply available in the market has led to high prices. The global pomegranate and pomegranate arils market was valued at 8.2 billion USD in 2018 and is expected to reach 23.14 billion USD by year 2026, at a CAGR of 14%[2].

The biggest importers of pomegranate globally are China (1.5 MMT), USA (2 lakh MT), Saudi Arabia (1.7 lakh MT), Russia (1.1 lakh MT) and Indonesia (1.1 lakh MT). The Netherlands (75,000 MT), Germany (57,000 MT), UAE (50,000 MT) and France (38,000 MT) are other importers of pomegranate.

Indian farmers and exporters have a huge opportunity in global market owing to its quantum of production and quality of pomegranates. Regions / countries covered under export markets are those to which pomegranate is either exported or can be exported from India. Export markets are classified as 1) Indian Sub-Continent, 2) Middle East, 3) Europe and 4) Others- USA and Australia.

[2] Agricultural and Processed Food Products Export Development Authority, India

2.1.1 Indian Sub-Continent

Indian Sub-Continent market are the markets in following countries – Bangladesh, Pakistan, Nepal, Bhutan, Sri Lanka, and Maldives.

2.1.1.1 Characteristics of the Segment

The biggest export destination for Indian pomegranates in 2021 was Bangladesh (63,000 MT), followed by Nepal at third place (10,000 MT). Exports to Bangladesh are increasing due to relaxed quality norms and transportation ease. The Indian Sub-continent market consists of countries that are in the lower-middle income to middle income category. Hence, the customers are more price sensitive and less stringent in terms of quality.

2.1.1.2 Competitors

Other countries:

The major exporter to both Bangladesh and Nepal is India as pomegranates are supplied through land routes which makes them less expensive as compared to other nations who have to supply through sea routes. Besides India, Bangladesh imports pomegranate from countries like China, Nepal, and South Africa.

Other Indian states:

The competition for supplying pomegranates comes from Indian states of Gujarat and Madhya Pradesh. However, MP produces only 1 lakh MT and Gujarat produces 6.7 lakh MT in comparison to Maharashtra's production of 18 lakh MT. Thus, Gujarat and MP are not able to supply enough pomegranates which Maharashtra can provide. Moreover, Maharashtra’s Bhagwa variety preferred in West Bengal is also preferred in Bangladesh.

2.1.1.3 Maintaining Quality Standards and Supply

Quality standards of Bangladesh and Nepal are similar to that observed in domestic market of India. For Bangladesh, the specifications are similar to that of West Bengal and for Nepal, they are similar to that of Uttar Pradesh. Specifications for West Bengal and Uttar Pradesh are provided in *Section 2.2.3*. The grading is done on the basis of fruit weight and colour. Superior grade pomegranates having weight above 250 g with red shiny colour are preferred for exports to these nations.

2.1.2 The Middle East

The Middle East market includes UAE, Saudi Arabia, Iran, Oman, Egypt, Qatar, Iraq, Kuwait, Syria, Israel, Jordan, and Bahrain.

2.1.2.1 Characteristics of the Segment

India caters to more than 40% of the pomegranate demand of UAE, and imports from other countries are mostly to fulfill the demand-supply gap with India. UAE also re-exports to the other Middle Eastern countries. India has 15% share in the imports of pomegranate into Saudi Arabia. Saudi Arabia also sometimes imports from Egypt owing to its proximity.

2.1.2.2 Competitors[3]

Egypt: While the Egyptian pomegranates are relatively bigger than Indian pomegranates, the preference in the Middle East is for Indian pomegranate (especially Bhagwa variety) as it has thicker arils and softer seeds. Lately, Egyptian pomegranates have also suffered certain quality issues due to hotter weather.

Thailand: Compared to India where pomegranate production is year-long, Thailand produces Pomegranate only between May-December. Moreover, domestic consumption in Thailand has been increasing and this coupled with short seasonal availability, its exports are likely to get impacted.

Vietnam: Pomegranate exports from Vietnam has been facing certain export barriers due to non-compliance with the set norms. The stringent requirements also include irradiation of fruits before importing them.

2.1.2.3 Maintaining Quality Standards and Supply

The UNECE standards: The development and condition of the pomegranates must be such that allow them to withstand transportation and handling so as to arrive in satisfactory condition at the place of destination. Ideally pomegranates must be intact, firm, clean, free from pests, damages. The UNECE standard divided pomegranates into 3 categories – Extra, Class I and, Class II.

The major distinction is done on the basis of size and weight. Size is determined by maximum diameter of the equatorial section, weight of the individual unit or count. To ensure uniformity in size, the range in size between produce in the same package shall not exceed as per the categories below:

[3] APEDA Agriexchange

Size code		Diameter (mm)	Weight (g)
1	A	>501	>=81
2	B	401-500	71-80
3	C	301-400	61-70
4	D	201-300	51-60
5	E	<200	40-50

Note: Detailed quality specifications, parameters and UNECE standards for exporting pomegranates is provided in *Appendix 1: United Nations Economic Commission for Europe (UNECE) standard for exporting pomegranates*.

The Middle East market demands high quality fruits and vegetables, hence only Grade A pomegranates from India is suitable for the market. Given that India produces pomegranates all through the year, its production basket is empirically far more than other countries.

2.1.2.4 Pricing

Indian pomegranates are preferred due to their soft seeds and better taste in comparison to other competitors. Indian variety 'Bhagwa' has a huge demand due to its sweet taste and better quality. Thus, while India competes with various players in the world, it manages to stand out with unique varieties. Indian farmers get a good price when they supply directly to exporters. The average price ranges between ₹90-120 per kg. When the demand is high, prices have soared to level of ₹120-150 per kg. Indian pomegranates prices in international market are also comparable to other competitors.

FPOs will incur costs for washing, sorting, and grading, in the range of ₹1-3 per kg, which are required for exports to the Middle East. Pre-cooling cost and logistics cost to Mumbai ports is also to be accounted when deciding on pricing.

The costs associated with exporting to UAE are certifications of ₹1500-2000 per container, port handling charges of ₹40,000-60,000 per container, and custom handling agent charges of ₹8,000-10,000 per container for documentation. The shipping charges to Dubai port is USD 1,500-2,500 per reefer container full load.

In Saudi Arabia, Egypt supplies pomegranates at 450 USD per MT, while Indian pomegranate has a landed cost of 1300 USD per MT. In UAE, Egyptian pomegranate has a landed cost of 450 USD per MT, India has a landed cost of 1400 USD per MT, Vietnam has a landed cost of 2200 USD per MT and Thailand has 4300 USD per MT landed cost. Indian exporters have huge opportunity to increase quantity of exports as Bhagwa variety is preferred over those coming from other nations. Indian pomegranate dominates UAE market currently and has further scope for grabbing more market share with consistent supplies.

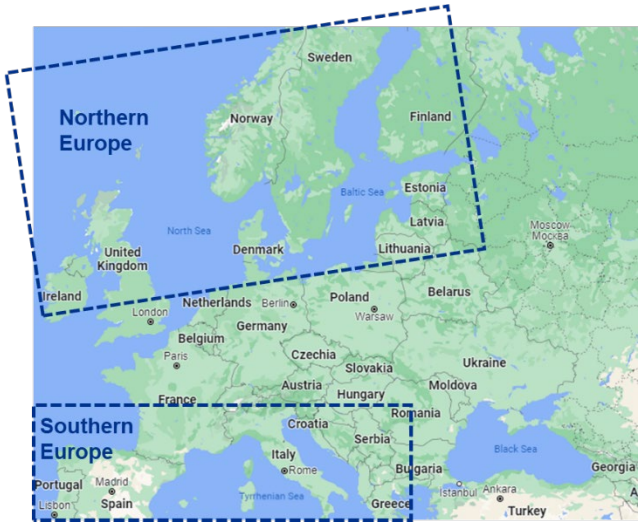
Detailed procedure for export of pomegranate from India is provided in *Appendix 2: Procedure for export of pomegranates from India*.

2.1.3 Europe

Europe market includes member countries of the European Union and United Kingdom. Major member countries of European Union that trade agricultural commodities with India, are Netherlands, France, Spain, Germany, Italy, Denmark, and Belgium.

2.1.3.1 Characteristics of the Segment[4]

Pomegranates are luxury food in the developed European countries and sell in the higher price category. The biggest pomegranate importers in Europe are Russia (1.1 lakh MT), Netherlands (75,000 MT), Germany (57,000 MT), and France (38,000 MT). The demand in Europe is increasing at a rapid rate. It provides a huge opportunity for Indian exporters which must be leveraged. The major growth drivers for European markets are growing health consciousness among general public, and its numerous uses as an ingredient (juices, flavoured water, jams, salads, desserts). Pomegranates are not only sold as whole fruit, but also in the form of arils in fresh or deep-frozen form. One of the strong pomegranate marketing companies is Pom Wonderful which is active with several products in Europe https://www.pomwonderful.com/. Pomegranates are mainly sold in supermarkets in United Kingdom, Netherlands, and Belgium. In France and Spain, pomegranates are sold in both hypermarkets and small specialty shops. Switzerland and Austria customers prefer to buy pomegranates from small local shops. Most imports of pomegranate in Europe go through **the Netherlands** and are distributed all over Europe. **Germany** is the most important buyer and destination of imported pomegranate. The growing second destination market is **Italy,** followed by **France, the United Kingdom, Austria, and Belgium.** Climate conditions in northern European countries are not suitable to produce pomegranates. They rely on imports from southern Europe, and from producing countries outside Europe. An attractive, deep-red pomegranate skin colour is appealing to retail consumers. Southern European countries, such as Spain, prefer sweeter varieties. Northern European countries prefer



[4] Centre for the Promotion of Imports from developing countries (CBI), Netherlands Enterprise Agency, funded by Ministry of Foreign Affairs, The Netherlands | Pomegranate falls under HS Code 08109075 - Fresh, fruit, edible

semi-sour varieties. Detailed procedure for export of pomegranate from India is provided in *Appendix 2: Procedure for export of pomegranates from India*.

2.1.3.2 Competitors

Other Countries[5]:

Colombia, Peru, and South Africa supply pomegranates to Europe which are routed through Germany. Turkey pomegranates reach Germany via Austria. Turkey and Peru have increased their supply significantly over the last five years. Turkey is known for its large production and relatively low prices and overlaps the season in Mediterranean Europe. Israel starts its supply early with the first variety in late August. Peru complements Turkey with an opposite season, but nearly oversupplied the European demand for the past two years in the spring and summer. In most recent years, Egypt has also increased its production, including the Wonderful variety, and is now competing with Turkey, Greece, and India. Apart from these countries, Tunisia is another major pomegranate exporter. Widely cultivated variety is Gabesi. Its harvest season coincides with the period of other Mediterranean countries of Egypt and Turkey. Tunisia mostly exports to Germany and Italy. Tunisian pomegranates are in the higher price segment; thus, they look for markets that appreciate quality and are willing to pay the right price for it.

Spain is the largest pomegranate producer in Europe. Its principal variety is Mollar de Elche. It has a 'protected denomination of origin' (PDO) due to its unique sweet taste with cream red colour. Spain's domestic consumption is low. It exports majority of its production to other European nations.

Countries located in Northern hemisphere have harvest season from October to February while in Southern hemisphere, it is from March to May. India and particularly Maharashtra are exception to this pattern as it produces pomegranates throughout the year. Its potential to market and supply pomegranates globally is the highest.

2.1.3.3 Maintaining Quality Standards and Supply

The Netherlands should be considered as a port of entry for imports that are to be re-exported to other countries in Europe. Developments and local strategies in Spain should also be followed as it is leading the production and supply season in Europe. This will help in understanding the European market and identify risks and opportunities in supplying.

Pesticide residues are one of the critical issues for fruit and vegetable suppliers to Europe. The European Union (EU) has prescribed the maximum residue levels (MRLs) for pomegranates. Few countries such as United Kingdom, Germany, Netherlands, and Austria have stricter MRLs than those laid down by EU.

[5] Centre for the Promotion of Imports from developing countries (CBI), Netherlands Enterprise Agency, funded by Ministry of Foreign Affairs, The Netherlands | Pomegranate falls under HS Code 08109075 - Fresh, fruit, edible

Besides adhering to the pesticide residues levels, farmers must also work towards achieving GLOBAL G.A.P. certification. It has become a standard requirement in northern European supermarkets. Europe is also seeing a growing interest in sustainability. Social and environmental certification schemes include actions focused on reducing and registering the use of pesticides, taking action to ensure the safety of employees and/or even including price guarantees for producers. Certification schemes that are in line with the Global Social Compliance Programme (GSCP) are more likely to be accepted by European supermarkets. Organic pomegranates demand is presently in niche markets and strongest in northern Europe. Please refer *Appendix 3: Exporting pomegranates to Europe* for more information on MRL, certifications and other compliances required/ preferred in European markets.

Direct competition of India in export of pomegranates is with Spain and Iran, which are nearer to European countries that import maximum quantities. Efforts need to be made for lowering production cost and increasing productivity. Pomegranate supplies from Spain and Iran to Europe taper from January onwards and therefore, supplies from India need to be concentrated during February to July months with the help of *Hast* and *Ambe bahar* when there is no competition from Spain.

2.1.3.3.1 Competitive advantage with Spain and Israel for pomegranate exports

Several supplying countries including Spain and Israel start their season with early varieties.

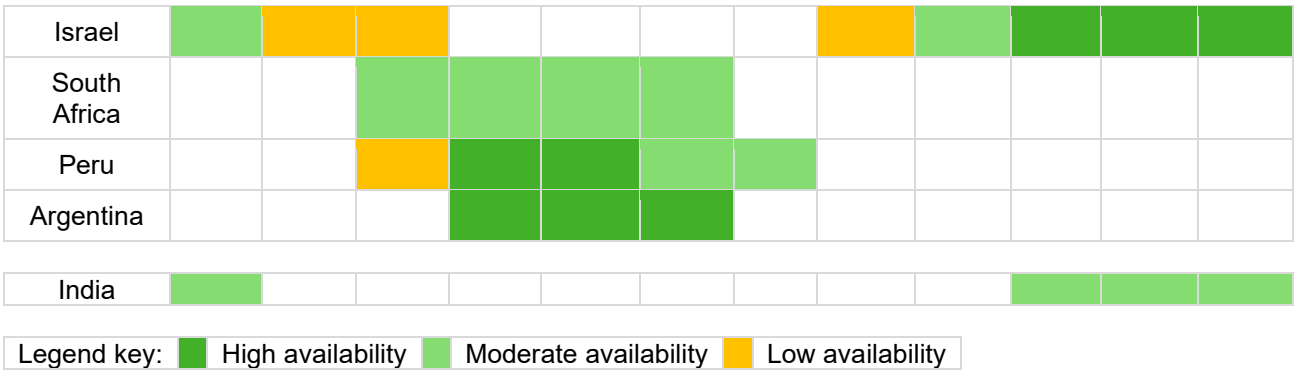
Many producers in Spain and Israel have started using optimal storage conditions such as intermittent warming treatment to extend the availability of their pomegranates until February-March.

With growing competition world-wide, innovations become critical, especially in terms of new high yielding, better quality varieties that fit particular markets. One such example is of Smith cultivar from Spain, known for intense red colour, both on the outside and inside, earlier ripening compared to other varieties and higher yields.

Another important aspect for remaining competitive is quality assurance. Case in point- The European Union recognized the Mollar Pomegranate from Elche, Spain as Protected Designation of Origin (PDO) in 2016. PDO signifies that pomegranates of Elche have a differentiated quality and unique characteristics due to the geographical area where they are produced. The Regulatory Council of Spain has been focusing on ensuring the quality of the Mollar Pomegranate from Elche, to defend this variety and origin and take actions and carry out promotional campaigns to create awareness and in turn, increase consumption.

Indicative availability calendar of pomegranate in Europe:

Country	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Spain												
Turkey												
USA												



Source: Centre for the Promotion of Imports from developing countries (CBI), Netherlands Enterprise Agency, funded by Ministry of Foreign Affairs, The Netherlands | Pomegranate falls under HS Code 08109075 - Fresh, fruit, edible

Classification-wise quality and size tolerance for European market are as per the UNECE standards discussed earlier and elaborated in *Appendix 1: United Nations Economic Commission for Europe (UNECE) standard for exporting pomegranates*.

2.1.3.4 Pricing

In Russian market, Turkey is a major player due to geographical proximity and presence of low-priced variety Caner and high-priced varieties like Hicaz and Wonderful. Turkey supplies to Russia at 940 USD per MT, and Egypt at 990 USD per MT landed cost. Indian pomegranates landed cost in Russia is high at 2300 USD per MT. Netherlands is a major pomegranate player which acts as importer and further exporter to other European nations. Spain, Colombia, and India export pomegranates at landed cost of 4000-4800 USD per MT. Thus, while considering export to Europe, analyzing the price premium is important. FPOs should also target directly supplying to the retail chains and creating market with minimum intermediaries. Furthermore, Geographical Indication (GI) tagged Solapur pomegranate should be better marketed in the importing countries for its Unique Selling Points such as soft, bold, and juicy arils, high number of arils per fruit, high TSS value, attractive colour, smooth and glossy outer rind and long shelf life. Besides, there has been increasing demand for pomegranate arils in Europe as nutritious yet convenience food. Market for arils can be explored, especially with variety like Arakta which has blood red arils, soft and juicy seeds. Since the margins on arils are higher and volumes lesser, exporting through air can also be explored.

2.1.4 Other Export Markets

USA and China are the biggest pomegranate importers in the world. Indian officials and APEDA are making efforts to make China open its market for Indian pomegranates.

Exports to USA has also resumed from January 2022 after 2-year break. Import Regulations for Indian Pomegranate in USA (Continental U.S. Ports) are given in *Appendix 4: Exporting pomegranates to USA &*

Australia. Furthermore, guidelines for pomegranate arils import from India to Australia given in *Appendix 4: Exporting pomegranates to USA & Australia*.

In USA, major suppliers are Mexico and Ecuador which sell pomegranate with a landed cost of 700 and 1000 USD per MT respectively. Indian pomegranate is expensive as the landed cost is around 11,000 USD per MT. Supplying to USA at such high rates makes Indian pomegranates uncompetitive. Thus, while considering export to USA, analyzing the price premium is important. FPOs should also target directly supplying to the retail chains and creating market with minimum intermediaries. Furthermore, Geographical Indication (GI) tagged Solapur pomegranate should be better marketed in the importing countries for its Unique Selling Points such as soft, bold, and juicy arils, high number of arils per fruit, high TSS value, attractive colour, smooth and glossy outer rind and long shelf life.

2.1.5 Establishing Connects

To export produce it is necessary to understand the major export routes and to establish connects with relevant companies / personnel. The selection of export route for an FPO should be done as per the quality of produce available for export, human capital to handle export related compliances, financial capabilities, and risk-taking ability.

Exports can be done through two routes:

Export Route	Description
Through an exporter from India	Companies / individuals specialize in exporting of agriculture and horticulture commodities to specific export markets. FPOs can supply produce as per required quality specifications to the exporters. The exporters buys the products from FPOs and then exports the products.
Through an importer at the importing country	FPOs can identify importers in the importing country. Importers are companies / individuals that obtained the necessary permissions in the importing country to import specific agriculture and horticulture commodities

Export Route	How to establish connects?
Through an exporter from India	● Trade fairs (physical and virtual) conduct by APEDA. Details are published on https://apeda.gov.in/apedawebsite/trade_promotion/International_trade_event ● Other National Trade Fairs conducted by various Organizations / Association. These events are published on various platforms such as: ○ https://krishijagran.com/events

Export Route	How to establish connects?
	○ https://www.kisaanhelpline.com/agriculture-events ○ https://www.2exhibitions.com/agriculture-and-forestry/ ● Online trade websites such as www.indiamart.com and www.exportersindia.com ● Buyer-Seller meets organized under the MAGNET project
Through an importer at the importing country	● Trade fairs (physical and virtual) conduct by APEDA. Details are published on https://apeda.gov.in/apedawebsite/trade_promotion/International_trade_event ● Other National Trade Fairs conducted by various Organizations / Association. These events are published on various platforms such as: ○ https://krishijagran.com/events ○ https://www.kisaanhelpline.com/agriculture-events ○ https://www.2exhibitions.com/agriculture-and-forestry/ ● International Trade Fairs such as: ○ Fruit Logistica: yearly event at Berlin, Germany is one of the most important events for fruit trade across the world ○ Asia Fruit Logistica: yearly event conducted in Asia – at Hong Kong / Bangkok ○ Fruit Attraction: yearly event at Madrid, Spain ● International events on horticulture trade are regularly published on the website of CBI – a centre for promotion of imports from developing countries to Europe. www.cbi.eu/events ● www.freshplaza.com, and https://www.hcisingapore.gov.in/events also provides an event calendar on important global fairs for horticulture crops

2.1.6 Advantages and Risks Associated

Each export route mentioned in the above sub-section comes with its risks. Not all export route is suitable for all FPOs, and it is necessary for FPOs to understand the risks before pursuing exports through any of the routes.

Export Route	Risks / Disadvantages	Advantages
Through an exporter from India	● Significant margin from the final export price is taken by the exporter	● Exporting through this route is suitable for all FPOs, especially for FPOs that

Export Route	Risks / Disadvantages	Advantages
	● FPO cannot make heavy export-oriented investments as export orders may not be assured ● Exporter can procure equivalent quality from any other seller at lower prices, if available	handle small quantities of produce ● Payment terms from exporters to FPOs can be for shorter credit time ● Export compliance is handled by the exporter – only quality adherence is taken care by FPOs
Through an importer at the importing country	● FPO should be able to send the minimum required quantity per consignment consistently. This is possible only through strong procurement (from its member farmers, and other growing regions) ● Payment default by importers in case the FPO does not take precautionary measures like Letter of Credit ● Credit timelines for payment from the importer can be as high 30 to 60 days ● FPO requires proper and complete knowledge on export compliance requirements of the importing country ● Rejection of consignment by importing country – shortfall in compliances. Especially for European and North American markets ● Importers in Bangladesh are recently facing difficulties in procuring Letter of Credit. This can significantly increase payment risk or last-minute cancellation of orders	● Higher margins ● Long-term business opportunity- FPO can become an exporter for other FPOs / market players ● Increase exports through volume and by adding other crops in which the FPO is dealing

2.2 Domestic Markets

Domestic markets here are the Government notified *Mandis* and private traders in large cities across the country.

2.2.1 Characteristics of the Segment

There are 12 major *mandis* in the country which trade pomegranates. Out of these, 7 *mandis* are in Maharashtra. These are Rahata, Solapur, Nasik, Mumbai Fruit market, Sangola, Aatpadi, and Pandharpur. Domestic trade of pomegranate in India is generally driven by the decentralized *mandi* system. Depending on the grade of fruit, different prices are decided, and trade is facilitated between the trader and the farmer.

Domestic markets consume all grades of pomegranate. In India, the main high season for pomegranates lasts from September to December and other peaks take place in February-March and June-August, but the same varieties are offered all year-round. Pomegranate trade is dominated by *Bhagwa* and *Arakta* varieties, although the latter is mostly intended for juice production. The purchasing power is growing in India, and the local market is demanding higher quality material.

2.2.2 Competitors

Maharashtra produces roughly 1.8 MMT of the total Indian pomegranate production of 3 MMT annually thus having a market share of 60%. The other major states from which Maharashtra faces competition are Gujarat, Karnataka, Andhra Pradesh, Madhya Pradesh, and Rajasthan.

Ruby and Mriduala are the main varieties grown in Karnataka and Dholka in Gujarat. However, their acceptance is less as compared to Bhagwa variety grown in Maharashtra and traders buy from these regions for fulfilling their overall requirements or because of cheaper prices.

While Rajasthan produces very less quantity of pomegranate, many traders from Maharashtra buy produce from the major producing belts in Rajasthan such as Jalore, Sirohi, Barmer, and Chittorgarh. The main variety grown here is called Gola which is not very suitable for exports owing to its lesser size. Many contractors from Maharashtra establish pre-harvest contracts with the farmers in Rajasthan. Besides quantity fulfillment, traders buy from Rajasthan as they get produce at cheaper prices since the markets in Rajasthan are still in developing stage for pomegranate and since the said regions have very hot climate with limited storage infrastructure, farmers also have lesser bargaining power.

The seasonality chart shown below explains the dominant position of Maharashtra pomegranate production in comparison to other states in country.

States	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Maharashtra (Nashik Region)												
Maharashtra (Solapur Region)												
Karnataka												
Andhra Pradesh												
Gujarat												

Legend key: Peak season | Lean season | Throughout the year

2.2.3 Maintaining Quality Standards and Supply

Domestic markets accept all grades of pomegranates as there is demand for all grades at respective price points from consumers. Grading pattern would differ from market to market. The main parameters for judging pomegranate quality are size and colour.

Grade	Weight	Colour
Large/ Superior	above 250 g	Red Shiny (100% colour)
Medium	180-250 g	Red (75% colour)
Small/ Inferior	less than 180 g	Pale Red

During summer months, one more parameter used for assessment is the internal colour of fruit. The fruit is cut and the aril colour is assessed and graded into following 3 categories:

- **Superior:** Aril colour is red
- **Medium:** up to 75% arils are red colour
- **Inferior:** the colour is pale red

Quality requirements of various markets to which produce from Maharashtra is supplied are provided below.

Market	Requirements	Variety
Delhi	All sizes, clean, spot and disease free	Bhagwa
Andhra Pradesh	Average quality and lower rate material	Bhagwa
Bhubaneshwar (Odisha)	All sizes, good colour, free from spots and diseases	Bhagwa
Jaipur (Rajasthan)	33% of each grade	No preference

Market	Requirements	Variety
Madhya Pradesh	All sizes, clean, spot and disease free	Bhagwa
Kanpur, Lucknow (Uttar Pradesh)	30% superior, remaining average or inferior	No preference
Amritsar, Ludhiana (Punjab)	100% superior	No preference
Patna (Bihar)	33.33% each grade- superior, average, and inferior	No preference
Kolkata (West Bengal)	All sizes, good colour, free from spots and diseases	Bhagwa

Farmers exclusively perform the activity of washing and cleaning of the fruits. Sorting & grading is done by farmers, commission agents and traders depending upon the agreement between them. Packaging and transportation are done by traders themselves. Cold storage and precooling are not generally practiced for supplying pomegranate in domestic markets. However, depending upon the lucrativeness of the concerned markets, FPOs can also setup packhouses with pre-cooling, washing, sorting, grading, and packaging infrastructure. The pomegranates should ideally be transported to long–distance markets in reefer trucks. With the help of suitable logistics arrangements and tie-ups with national traders, FPOs can explore opportunities throughout India.

Pomegranates can also be stored in controlled atmosphere for up to 2–3 months. Prefabricated controlled atmosphere storage rooms can be used to store pomegranates at the time of glut, for later sales when the market scenario improves. The recommended storage conditions for storing *'Bhagwa'* variety of pomegranate (the major variety cultivated by the Maharashtrian farmers) are – 5 °C, >92% Relative Humidity (RH) and 2% O_2 + 3% CO_2.

Better railway facilities from Solapur region of Maharashtra would help in better supply of pomegranates to South Indian markets.

2.2.4 Pricing

Pricing in domestic markets depends on the day-to-day supply-demand dynamics. Hence, FPOs can command remunerative price only by supplying good quality produce to the market.

Grade	Peak Season – Price Range	Lean Season – Price Range
Grade 1	₹90-120 per kg	₹120-150 per kg
Grade 2	₹70-90 per kg	₹90-110 per kg
Grade 3	₹50-70 per kg	₹70-90 per kg

FPOs should also take into consideration the freight charges to various regions while deciding on interstate trade. Cost of transporting from Maharashtra to Delhi may range between ₹5-7 per kg and from Maharashtra to Kolkata may range between ₹8-12 per kg.

www.agmarket.gov.in is the Government portal that provides information on the maximum price, minimum price, and modal price of pomegranate at all key markets in a particular day / week / month where pomegranate is being traded. FPOs can use the portal to understand the pricing trend before sending their produce to distant *mandis*.

2.2.5 Establishing Connects

FPOs can supply to domestic markets either by taking their produce for auction at *Mandis* or by directly supplying to traders in different markets. Connects can be established through visits to *Mandis* in different cities to meet Commission Agents. It can also be done by seeking help from other FPOs or traders dealing in pomegranate in surrounding geography.

Agriculture / horticulture commodities focused marketplace platforms are effective tool for FPOs to find buyers across the country. Trading option for pomegranate is available on ***Bijak*** mobile application. Online B2B platforms / trade websites such as www.enam.gov.in, www.farmerconnect.apeda.gov.in, www.kisanmandi.com, www.farmersmandi.in, www.indiamart.com and www.tradeindia.com can also be used for listing of pomegranate.

2.2.6 Advantages and Risks Associated

Selling to major domestic markets decreases the price risk significantly. When prices are low in nearby markets, FPOs can sell their produce to other domestic markets wherever feasible. Consistent supply to major domestic markets is necessary for FPOs to build long-term relationship with buyers. This acts as a significant hedge against price variations in the nearby markets.

Risk of delayed payments or payment defaults is higher when selling to distant domestic markets in comparison to selling in nearby markets. FPOs should also be able to send a complete truck load for optimal logistics cost, thereby should have strong procurement and consistent supply.

2.3 Organized Retail and eCommerce

Organized retail and eCommerce are the fastest growing marketing channel for horticulture crops. Organized retail includes large national retail players like Reliance, More, and DMart, and other regional retail companies. Major eCommerce companies dealing in horticulture crops are BigBasket, Swiggy, Amazon, and Flipkart. Agri supply chain startups that procure from farmers and supply to various channels such as WayCool and Ninjacart are also categorized as eCommerce.

2.3.1 Characteristics of the Segment

The organized retail and eCommerce market targets the mid-premium to premium consumer categories. Hence, there is significant focus on quality of the produce.
The companies in this market usually procure from *Mandis* and from traders / village-level aggregators. Over the recent years, there is significant focus from these companies to procure directly from farmers / FPOs to reduce costs and have more control over quality. With this aim, many retail outlets have setup own facilities and collection centers in fruits & vegetables catchment areas in Maharashtra.

Some retail chains buy directly from farmers while most of them prefer designated vendors who buy fruits and vegetables on their behalf. The major collection centers of retail chains are located at Nashik, Narayangaon, Ahmednagar and Sangola in Maharashtra.

2.3.2 Competitors

FPOs looking to supply to companies in this segment are competing with *mandis* and traders across the country. These companies procure across the country, where required quality at the right price is available. Retail organizations buy pomegranates in Maharashtra for supplying to their stores in the state as well as country. Maharashtra has the highest number of retail outlets, shops, supermarkets, and hypermarkets in India on account of a thriving population with relatively high-income households. So, the retail organizations prefer procurement of pomegranates from Maharashtra to reduce costs by minimizing distance between procurement centre and points of sale.

2.3.3 Maintaining Quality Standards and Supply

Organized retail and E-commerce platforms prefer buying Grade A and Grade B pomegranates. The key to establish business relationship with this market is to consistently supply the required quality of pomegranates. The general quality parameters for pomegranates are mentioned below.

Parameters	eCommerce	Aggregator	Aggregator
Grade	Big	Medium	Small
Weight of fruit	>250 g	200-250 g	150-200 g
Colour	Red (>70%)	Pinking red	Red
Criteria for rejection	• Presence of defects, bruises, or damages • Wet, dried, or shriveled • Rotten or soft • Pest infestation • Sun burnt with black patches	• Immature • Damaged • Dried or dull skin • Surface with holes or insect infected • Visibility of foreign matter • Blackening and rotting	

FPOs should ensure that it delivers on the quality requirements of these market players consistently to build long-term business relationship. To obtain good quality produce, FPOs can invest in packhouse, washing and sorting infrastructure. Washer is required to deliver clean fruits, while sorting can be done manually. FPOs should also pack the fruits in the desired packaging by the market players – crates or corrugated fibre board boxes.

Investing in pre-cooling facilities and cold storage should be as per market demand. Pre-cooling maintains the freshness and quality of produce during long-distance transportation. Controlled atmosphere storage facility would be required if FPO intends to aggregate and supply in batches to the market players, and not daily. Once fruits are stored in cold storage, it is recommended that it is transported in reefer trucks, especially for long distance transportation.

2.3.4 Pricing

The pricing for this category is dependent on the prevalent domestic market prices. Since these companies procure from different States to meet their demand, they can easily offset price increase in one market by procuring from another market. Most retail players prefer to buy Bhagwa variety of pomegranate. The average price quoted by retail players in Maharashtra is ₹80-100 per kg.

Entering into seasonal contracts with these companies in this segment is a win-win situation for both the parties. FPOs can supply at a reasonable and assured price, while the companies are guaranteed of required quality and quantity through the season. Pricing is decided on mutual agreement based on last season(s) markets' price trends. Prices obtained by supplying to these companies may not necessarily be higher than the market prices but FPOs can safeguard themselves against subdued low market prices during peak season.

2.3.5 Establishing Connects

Many market players in the Organized retail and eCommerce segment are actively working towards procuring from farmers and FPOs. They procure from major production regions for each crop, and hence procure from Solapur, Pune, Ahmednagar, and Nasik regions from Maharashtra.

FPOs can try to establish connects with this market segment by:

- Through procurement centers of companies in surrounding region
- Through mutual connects who supply to such companies
- Listing on online trade websites such as www.indiamart.com and www.tradeindia.com
- Listing on agriculture / horticulture specific eCommerce platforms such as Bijak
- Various Government Departments / schemes conduct Buyer-Seller meets. FPOs can meet representatives from companies in this segment
- MAGNET project's Buyer-Seller meets. These Buyer-Seller meets offer platform for FPOs to interact with various market players including Organized retailers and eCommerce players
- Following websites give details on different events including Buyer-Seller meets that happen across the country:
    - https://krishijagran.com/events
    - https://www.kisaanhelpline.com/agriculture-events
    - https://ficci-web.com/events
    - https://www.2exhibitions.com/agriculture-and-forestry/

2.3.6 Advantages and Risks Associated

FPOs that have / can invest in building good harvest infrastructure can get good value for their Grade A and B pomegranates. This segment is growing rapidly, hence making good business relationship with customers of this segment can lead to long term benefits for FPOs. Some companies in these segments also invest in capacity building and post-harvest infrastructure, which the FPOs can leverage. FPOs can enter into formal contracts with these customers and sell at profitable prices at reduced risk. Payment default risk is lower with these customers.

These customers function on credit terms, though credit terms can be as short as 7 days to 30 days. Some retail players have payments terms of 2-3 days only. Rejections and price cuts due to quality issues can be common occurrence as they can have strict quality norms. Since these customers procure from different pomegranate production regions and numerous buyers, the pricing power with FPOs is low during negotiations.

2.4 Processors

Processors are manufacturing units of secondary or tertiary processed products of pomegranate. They can be big processing units, MSMEs or cottage industries.

2.4.1 Characteristics of the Segment

Processors are highly price sensitive customers, and usually procure low grade pomegranate for processing. The processors use raw pomegranates for aril extraction, and to produce juice, syrup, and jams. The European market is one of the most important markets for arils. Potential markets are The Netherlands, supplying to Germany, Belgium and Switzerland followed by France, Sweden, and Norway. The use of pomegranate peel and seeds in pharmaceutical industry is also increasing. It is also being used to manufacture beauty products for skincare routine. However, the processors majorly procure from traders. Few FPOs also supply small quantities to processors.

2.4.2 Competitors

For an FPO looking to supply to processors, its competitors are the local *Mandis* and wholesalers. The processors also tend to have long-standing relationship with select suppliers, as the suppliers understand their requirements. Large processors usually procure from multiple states to have consistent supply throughout the year.

2.4.3 Maintaining Quality Standards and Supply

In Maharashtra, processors procure pomegranates in large quantities at low rates. They have tie-ups with big traders who usually supply to exporters. The Grade C and lower pomegranates rejected by exporters and domestic traders is procured by processors at low rates. Selected FPOs also supply to such processors but the price realization is very low. Quality is not a major concern for processors.

Pomegranate arils can be extracted either manually and packed in punnets and marketed, although the shelf-life is only 5-8 days (when refrigerated). Besides selling immediately (post-extraction) at the local level, the FPOs can carry out ‘Individual Quick Freezing’ (IQF) of the arils and sell to distance – markets or export the same to European markets.

Processors generally maintain a stock buffer and procure on periodic basis. They also function in planned schedules and can provide their requirement quantity and timelines in advance. Hence, supply to processors can be done in batches, as and when it procures sufficient quantity of required grade of pomegranates. FPOs should target to supply in full truck loads (at least 10 MT) to minimize logistics cost.

2.4.4 Pricing

Industrial processors tend to maintain a procurement price of 10-15% lower than the market price. This is because of the large quantities they usually procure, thus giving an assured market for the suppliers.

Small scale processors and cottage industries operate at the day-to-day market prices. FPOs supplying to them have to match the prices that is prevailing the market for the required grade of pomegranates.

2.4.5 Establishing Connects

FPOs can supply pomegranates to processors in its region (district and surrounding districts). FPOs can try to establish connects with this market segment by:

- Approaching processors in their region directly
- Through mutual connects who supply to such companies
- Listing on online trade websites such as www.indiamart.com and www.tradeindia.com
- Various Government Departments / schemes conduct Buyer-Seller meets. FPOs can meet representatives from companies in this segment
- MAGNET project's Buyer-Seller meets. These Buyer-Seller meets offer platform for FPOs to interact with various market players including Processors

2.4.6 Advantages and Risks Associated

Long-term business association with processors ensures a steady market for the lower grade pomegranate produce. Supply to processors can be done in batches as and when sufficient quantity of required quality pomegranate is available with the FPO. Logistics cost can be minimized by doing batch transportation.

Processors usually function on long credit cycles from 15 to 60 days, leading to payment default risk. Industrial processing units may procure in large quantities. Though this might provide FPOs with a large business opportunity, this increases the risk of over dependence on single / handful of companies.

Appendix 1: United Nations Economic Commission for Europe (UNECE) standard for exporting pomegranates

The development and condition of the pomegranates must be such that allow them to withstand transportation and handling and to arrive in satisfactory condition at the place of destination. Pomegranates must be sufficiently developed and display satisfactory maturity and/or ripeness. The pomegranates must be having the following parameters:

- Intact
- Sound (produce affected by rotting, or deterioration, frost, low and/or high temperatures and sunburn affecting the arils of the fruit such as to make it unfit for consumption is excluded)
- Clean, practically free of any visible foreign matter
- Practically free from pests
- Free from damage caused by pests affecting the flesh
- Free of abnormal external moisture
- Free of any foreign smell and/or taste

1) Pomegranates are classified into the following 3 grades:

Extra Class:

- Pomegranates in this class must be of superior quality
- They must be characteristic of the variety
- They must be free from defects, except for very slight superficial defects, provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package

Class I:

- Pomegranates in this class must be of good quality
- They must be characteristic of the variety
- The following slight defects, however, may be allowed, provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package: a slight defect in shape, slight defects in coloring, slight skin defects including cracking. These defects must not, in any case, affect the arils of the fruit.

Class II:

- This class includes pomegranates that do not qualify for inclusion in the higher classes but satisfy the minimum requirements specified above.

- The following defects may be allowed, provided the pomegranates retain their essential characteristics as regards the quality, the keeping quality and presentation: defects in shape, defects in coloring, skin defect including cracking. These defects must not, in any case, affect the arils of the fruit.

2) Classification-wise quality tolerance parameters:

Extra Class:

- 5% by number or weight, of pomegranates not satisfying the requirements of the class but meeting those of Class I is allowed.
- Within this tolerance not more than 0.5 per cent in total may consist of produce satisfying requirements of Class II quality.

Class I

- 10% by number or weight, of pomegranates not satisfying the requirements of the class but meeting those of Class II is allowed.
- Within this tolerance not more than 1 per cent in total may consist of produce satisfying neither the requirements of Class II quality nor the minimum requirements, or of produce affected by decay.

Class II

- 10% by number or weight, of pomegranates satisfying neither the requirements of the class nor the minimum requirements is allowed.
- Within this tolerance not more than 2 per cent in total may consist of produce affected by decay.

3) Provisions concerning sizing

- Size is determined by maximum diameter of the equatorial section, weight of the individual unit or count.
- To ensure uniformity in size, the following is recommended

Grade-wise quality specifications for international market			
Size code		Diameter (mm)	Weight (g)
1	A	>501	>=81
2	B	401-500	71-80
3	C	301-400	61-70
4	D	201-300	51-60
5	E	<200	40-50

4) Uniformity

- The contents of each package must be uniform and contain only pomegranates of the same origin, variety or varietal type, quality and size (if sized).
- However, a mixture of pomegranates of distinctly different skin colours may be packed together provided they are uniform in quality and, for each skin colour concerned, in origin. However, in case of those mixtures, uniformity in size is not required.
- The visible part of the contents of the package must be representative of the entire contents.

5) Packaging

- Pomegranates must be packed in such a way as to protect the produce properly.
- The materials used inside the package must be clean and of a quality such as to avoid causing any external or internal damage to the produce. The use of materials, particularly of paper or stamps bearing trade specifications, is allowed, provided the printing or labelling has been done with non-toxic ink or glue.
- Stickers individually affixed to the produce shall be such that, when removed, they neither leave visible traces of glue nor lead to skin defects. Information lasered on single fruit should not lead to flesh or skin defects.
- Packages must be free of all foreign matter.

6) Identification

- Packer and/or dispatcher/exporter:
- Name and physical address (e.g., street/city/region/postal code and, if different from the country of origin, the country) or a code mark officially recognized by the national authority if the country applying such a system is listed in the UNECE database.

7) Nature of produce

- “Pomegranates” if the contents are not visible from the outside
- “Mixture of pomegranates”, or equivalent denomination, in the case of a mixture of distinctly different skin colours of pomegranates. If the produce is not visible from the outside, the varieties and/or colours and the quantity of each in the package must be indicated.

8) Origin of produce

- Country of origin4 and, optionally, district where grown, or national, regional or local place name
- In the case of a mixture of distinctly different skin colours of pomegranates of different origins, the indication of each country of origin shall appear next to the name of the skin colour concerned.

Appendix 2: Procedure for export of pomegranates from India[6]

1) Farm Registration: Each farmer/lessee farmer/lessee farming organization who directly controls farming operations, who intends to export directly or supply pomegranates to an exporter, will apply for registration of its farm and plot(s) to the concerned District Superintending Agri./Hort. Officer.
2) Physical Verification: After receiving the application from farmer/lessee farmer/lessee farming organization District Superintending Agriculture/ Horticulture Officer shall physically verify the correctness of the information submitted.
3) Registration Certificate: The plot registration certificate shall be issued only through AnarNet. The registration will be valid for one year. Therefore, all the registered pomegranates farmers shall renew their farm registration every year and a fresh certificate showing renewal of the plot will be issued.
4) Record Maintenance: Each farmer/lessee/lessee organization will maintain the registration and agrochemical application records as per the format titled, “Plot Registration and Field Agrochemical Application Record”.
5) All farmers/lessee farmer/lessee farming organization shall maintain a record of package of practices followed by them in a prescribed register to be provided by the respective State Horticulture/Agriculture Departments.
6) Instructions to be followed:
    - The farmer/lessee farmer/lessee farming organization shall not use agrochemicals other than those allowed for use on pomegranates
    - Misbranded, un-recommended or banned agrochemicals or any other harmful chemicals shall not be used.
    - After drawl of samples for residue testing, spraying/application of any agrochemicals shall not be carried out.
    - Not to allow sampling or exports of pomegranates from unregistered farms.
    - Amendments, if any, should be done on the registration records or the Registration Certificate issuing authority.
7) Harvesting: Each farmer, at the time of harvest, shall give declaration to the exporter stating that pesticides, insecticides, fungicides, weedicides, etc. have not been sprayed/applied after drawl of samples for laboratory analysis. The declarations shall also state that there is no plot under the farm that is not registered by the Agri./Hort. Office and that none of the plots mentioned in the declaration are under suspension/have been cancelled for export. This declaration shall be handed over to the exporter at the time of harvesting of the produce.

[6] *APEDA*

8) Sampling: Farmers/lessee farmers/lessee farming organizations/ exporters should provide a schedule to laboratories well in advance for drawl of samples to enable them to plan their sampling arrangements.
9) Laboratory Inspection: The laboratory shall verify the following documents at the time of inspection:
    - Packhouse Recognition Certificate issued by APEDA, and
    - Certificate of Authorization issued by Directorate of Marketing & Inspection (DMI)
    - Fumigation certificate for wooden packing material issued by the Government of India accredited Methyl bromide (MBR) fumigator as per NSPM-12.
    - Agmark Grading certificate issued by DMI.
    - Copy of Contract/LC for additional declaration regarding quality, quarantine issues and pest and diseases to be given in the Phytosanitary certificate to fulfil the quarantine regulations of importing country.
10) Issue of Certificate of Agmark Grading (CAG) and Phyto Sanitary Certificate (PSC): The CAG shall be issued only after receipt of the inspection report from the laboratories through AnarNet. The farmer/exporter shall request one of the Government of India notified under Quarantine Regulation (IPPC 1951) to State PSC Authorities to issue the Phyto Sanitary Certificate.

Appendix 3: Exporting pomegranates to Europe[7]

Required Compliances for entering European Markets- MRL

- Pesticide residues are one of the crucial issues for fruit and vegetable suppliers
- The European Union (EU) has set maximum residue levels (MRLs) for pomegranates
- Products containing more pesticides than allowed will be withdrawn from the European market
- Note that buyers in several countries such as the United Kingdom, Germany, the Netherlands and Austria, use MRLs which are stricter than the MRLs laid down in EU legislation
- EU MRL database: EU Pesticides Database (v.2.2) Download MRLs Data (europa.eu)
- EU Pesticides Database (v.2.2) | Latest updates on MRLs (europa.eu)
- IPM: Reduce the amount of pesticides by applying integrated pest management (IPM) in production (IPM is an agricultural pest control strategy that includes growing practices and chemical management)
- Contaminants: Current maximum limit for cadmium in pomegranate- 0.02 mg/kg. For other general requirements concerning contaminants, traceability and plant health control, check the buyer requirements for fresh fruit and vegetables on the CBI market intelligence platform for fresh fruit and vegetables: Market Information for exporting products to Europe | CBI

Required Compliances for entering European Markets- Certifications

Labelling:

Officially recognized code mark or traceability code (for example Global Location Number (GLN) or GLOBALG.A.P. Number (GGN) (recommended)

In addition, the label should include a certification logo (if applicable) and/or retailer logo (in the case of private label products).

Certification as guarantee:

The most requested certification for pomegranates is GLOBALG.A.P., a pre-farm-gate standard that covers the whole agricultural production process, from before the plant is in the ground to the non-processed product. It is nearly impossible to supply fruit without GLOBALG.A.P., as it has become practically a standard requirement for most supermarkets, especially in northern Europe.

Other food safety management systems:

- BRC (British Retail Consortium)
- IFS (International Food Standard)

[7] Centre for the Promotion of Imports from developing countries (CBI), Netherlands Enterprise Agency, funded by Ministry of Foreign Affairs, The Netherlands | Pomegranate falls under HS Code 08109075 - Fresh, fruit, edible

- FSSC22000 (Food Safety System Certification)
- SQF (Safe Quality Food Programme)

These management systems are supplemental to GLOBALG.A.P. and are recognized by the Global Food Safety Initiative (GFSI).

Social and environmental compliances:

- **The GLOBAL G.A.P Risk Assessment on Social Practice**
    - There is growing attention for the social and environmental conditions in the producing areas. It can be an advantage to be GRASP certified.
    - GRASP is a social add-on of GLOBALG.A.P. and an accessible certification that is gaining importance in Europe.
- **Standards recognized by the Sustainability Initiative Fruit and Vegetables (SIFAV)**
    - Consists of an initiative from traders and retailers to become 100% sustainable in sourcing from Latin America, Africa and Asia by 2020.

Appendix 4: Exporting pomegranates to USA & Australia[8]

A) Pomegranate (Fruit) from India into Continental U.S. Ports

1) **Import Permit Required:** An Import Permit is required. To obtain a permit, refer Animal and Plant Health Inspection Service (APHIS) eFile https://www.aphis.usda.gov/aphis/banner/help/efile/landing-page

2) **Subject to Inspection:** Pomegranate is subject to inspection at the port of entry and all general requirements of 7 CFR 319.56-3 https://www.ecfr.gov/current/title-7/subtitle-B/chapter-III/part-319/subpart-L/section-319.56-3

3) **Condition of Entry Treatment:** Irradiation- Irradiated in country-of-origin, refer T105-a2https://www.aphis.usda.gov/import_export/plants/manuals/ports/downloads/treatment.pdf?scheduleName=T105-a-2

   - **Mandatory Preclearance:** Consignments must be precleared. To validate foreign site preclearance inspection and/or treatment, precleared consignments must be accompanied by a signed Plant Protection & Quarantine (PPQ) Form 203 https://www.aphis.usda.gov/library/forms/pdf/ppq203.pdf

   - **Phytosanitary Certificate:** Must be accompanied by a phytosanitary certificate issued by the National Plant Protection Organization (NPPO) of the country of origin stating the fruit in this consignment was inspected and found free of the mite *Tenuipalpus granati*, the false spider mite *Tenuipalpus punicae*, and the bacterium *Xanthomonas axonopodis pv. punicae.*

   - **Packaging or Labeling Requirements:** Commodities irradiated in the country of origin must meet the labeling and packaging requirements as given in next slide

4) **Boxes or cartons must be marked with:** Production Unit Code (PUC), Treatment Facility Code (TFC), Packinghouse Code (PHC), Packing date, Lot number, A stamp with the words "Treated by irradiation" or "Treated with radiation ", The international radura symbol is provided is provided here.

5) **If the boxes or cartons are not palletized, they must also include:** Treatment Facility Code (TFC), Treatment Identification Number (TIN), Treatment date

[8] *USDA & APEDA*

6) **If the boxes or cartons are palletized, the pallets need to display only:** Treatment Facility Code (TFC), Treatment Identification Number (TIN), Treatment date.

7) The palletized boxes or cartons must be wrapped with polyethylene shrink wrap, net wrapping, or strapping (excluding air shipments.) If air shipments are not palletized, cartons must be pest proof, and the shipment can be broken down into smaller shipping units, such as LD-3 air cargo containers.

- **Condition of Entry Treatment:** T105-a-2 (Irradiation) Irradiated upon arrival in the US
- **Condition of Entry Treatment:** A bilateral agreement between APHIS and the National Plant Protection Organization (NPPO) of the exporting country is required before irradiation in the U.S. is an approved option

B) Guidelines for pomegranate arils import from India to Australia

The detailed guidelines are mentioned in the link provided below

https://apeda.gov.in/apedawebsite/Announcements/Circular_Grant_of_Market_Access_for_Export_of_Pomegranate_Arils.pdf