

# Custard Apple Market Access Plan

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

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# 1 Crop Background

Custard apples are tropical fruits that are native to the Central and South American region and is now produced in various tropical and sub-tropical regions across the world. Custard apples are also known as “sugar apples”, “cherimoya”, “atemoya”, and “sweetsop”. The fruit has a creamy texture with sweet taste making it a suitable dessert table fruit. It is also processed and consumed as ice creams, powders, shakes, and smoothies. The major species of custard apples are *Annona reticulata*, *Annona squamosa*, and a cross of these 2 varieties (Atemoya). *Annona squamosa* is the commercially cultivated species in India and the same is covered through this document.

## 1.1 Global Scenario

Custard apple is traded only in limited quantities, hence its production and trade are not tracked by organizations such as FAO. Hence, no data on global production and trade is provided in this document.

Across the world, custard apple is grown both commercially and as wild fruits. Since the commercialization of the fruit is limited, there are limited / no varieties that cross-cut different geographical regions for cultivation. Most of the varieties are highly localized that have grown as wild trees in that area over the years.

## 1.2 Indian Scenario

### 1.2.1 Production

India’s production of custard apple is estimated to be 4.11 lakh MT across an acreage of 0.48 lakh hectares in 2021-22. The production is showing an increasing trend over the last 4 years from 2018-19 to 2021-22. The annual growth rate of production from 2018-19 to 2021-22 is 5%. The area under cultivation and productivity both show no clear trend unlike the increasing trend in production from 2018-19 to 2021-22.

**Table 1: India – Custard Apple Production, Area under Cultivation and Productivity – 2017-18 to 2021-22**

Year	Production (MT)	Area (ha)	Productivity (MT/ha)
2021-22 <sup>#</sup>	4,11,222	48,259	8.52
2020-21	4,07,284	46,754	8.71
2019-20	3,94,604	49,756	7.93
2018-19	3,39,271	40,225	8.43
2017-18	4,00,611	45,539	8.80

Source: Department of Agriculture and Farmers Welfare, Government of India; # 3<sup>rd</sup> estimate

Maharashtra is the leading producer of custard apple in the country, with an estimated production of 1.22 lakh MT over an acreage of 0.16 lakh hectares. Top 2 producers, Maharashtra, and Madhya Pradesh alone account for 56% of India's production, and the top 4 producers account for 88% of India's production. Madhya Pradesh has the highest productivity among the top 10 custard apple producing States, at 12.28 MT/ha compared to the national productivity of 8.52 MT/ha. Maharashtra's productivity (7.54 MT/ha) is slightly lower than the national productivity and 37% lower than Madhya Pradesh's productivity.

<b>Table 2: Top 10 States in Custard Apple Production in India – 2021-22<sup>#</sup></b>				
<b>S. No.</b>	<b>States</b>	<b>Production (MT)</b>	<b>Area (ha)</b>	<b>Productivity (MT/ha)</b>
1	Maharashtra	1,21,766	15,929	7.64
2	Madhya Pradesh	1,09,257	8,896	12.28
3	Gujarat	77,568	7,545	10.28
4	Chhattisgarh	53,451	9,586	5.58
5	Andhra Pradesh	18,000	1,800	10.00
6	Telangana	9,864	926	10.65
7	Karnataka	7,753	996	7.78
8	Odisha	5,960	1,480	4.03
9	Rajasthan	4,912	582	8.44
10	Tamil Nadu	2,414	380	6.35
<b>India</b>		<b>4,11,222</b>	<b>48,259</b>	<b>8.52</b>

*Source: Department of Agriculture and Farmers Welfare, Government of India; # 3<sup>rd</sup> estimate*

In 2018-19, Maharashtra replaced Madhya Pradesh as the top procuring state of custard apple, and since has remained the top producer of custard apple in the country. Other top producers over the last 5 years are Gujarat, Chhattisgarh, and Andhra Pradesh.

<b>Table 3: Top 5 States in Production from 2017-18 to 2021-22<sup>#</sup></b>				
<b>2021-22<sup>#</sup></b>	<b>2020-21</b>	<b>2019-20</b>	<b>2018-19</b>	<b>2017-18</b>
Maharashtra	Maharashtra	Maharashtra	Maharashtra	Madhya Pradesh
Madhya Pradesh	Madhya Pradesh	Madhya Pradesh	Madhya Pradesh	Maharashtra
Gujarat	Gujarat	Gujarat	Gujarat	Gujarat
Chhattisgarh	Chhattisgarh	Chhattisgarh	Chhattisgarh	Chhattisgarh
Andhra Pradesh	Andhra Pradesh	Andhra Pradesh	Andhra Pradesh	Andhra Pradesh

*Source: Department of Agriculture and Farmers Welfare, Government of India; # 3<sup>rd</sup> estimate*

Maharashtra's share in India's custard apple production has been in the range of 25-35% between 2018-19 to 2021-22, with no clear trend. The State's productivity has dropped from 8.12 MT/ha in 2020-21 to

7.64 MT/ha in 2021-22, and the production is on a decreasing trend for the last 3 years from 2019-20 to 2021-22.

**Table 4: Maharashtra – Custard Apple Production, Area under Cultivation and Productivity – 2017-18 to 2021-22**

Year	Production (MT)	Area (ha)	Productivity (MT/ha)	% of India's Production
2021-22 <sup>#</sup>	1,21,766	15,929	7.64	29.61%
2020-21	1,30,826	16,109	8.12	32.12%
2019-20	1,32,284	20,218	6.54	33.52%
2018-19	94,692	13,308	7.12	27.91%
2017-18	92,752	12,631	7.34	23.15%

*Source: Department of Agriculture and Farmers Welfare, Government of India; # 3<sup>rd</sup> estimate*

District-wise production of custard apple is provided in the table below. Pune is the top producer, accounting for nearly 40% of the State's custard apple production. Pune's productivity is also the highest amount the top 10 custard apple producing districts. Saswad is a major production region in Pune for custard apples.

**Table 5: Top 10 Districts in Custard Apple Production in Maharashtra – 2021-22<sup>#</sup>**

S. No.	States	Production (MT)	Area (ha)	Productivity (MT/ha)
1	Pune	46,390	4,639	10.00
2	Ahmednagar	20,456	2,730	7.49
3	Beed	14,737	1,637	9.00
4	Solapur	10,234	1,462	7.00
5	Osmanabad	5,230	715	7.31
6	Akola	4,165	595	7.00
7	Jalgaon	3,448	431	8.00
8	Parbhani	2,806	425	6.60
9	Buldhana	2,335	818	2.85
10	Nashik	1,965	256	7.68
<b>Maharashtra</b>		<b>1,21,766</b>	<b>15,929</b>	<b>7.64</b>

*Source: Department of Agriculture, Government of Maharashtra; # 3<sup>rd</sup> estimate*

## 1.2.2 Trade – International

The export of custard apples from India is limited and has not grown over the last 5 years from 2017-18 to 2021-22. In 2021-22, only 732 MT of custard apple was exported from India. Though this is a 100% increase

from 2020-21, the export quantity is less than what is was 5 years back in 2017-18. The limited international trade is because custard apples are not widely consumed across the world, and most producing countries consume it locally / domestically. Hence, there is limited awareness of custard apples outside of production regions.

Year	Quantity (MT)	Value (₹ Crs)
2021-22	732	4.85
2020-21	353	3.36
2019-20	869	8.19
2018-19	980	7.64
2017-18	780	6.8

*Source: Agri Exchange – APEDA*

Bangladesh was the largest importer of custard apples from India in 2021-22, followed by regular importers such as UAE and Oman. Though the quantity of exports to Bangladesh and UAE is similar, the value of exports to UAE is nearly 5 times to that of exports to Bangladesh. This serves as an indicator on the quality of fruits exported to Bangladesh and to UAE (and other middle-east markets).

Country	Quantity (MT)	Value (₹ Crs)
Bangladesh	265.03	0.52
UAE	247.13	2.47
Oman	104.25	0.75
Bahrain	42.3	0.31
Qatar	25.12	0.25
<b>India</b>	<b>732</b>	<b>4.85</b>

*Source: Agri Exchange – APEDA*

The top 5 importers from India from 2017-18 to 2021-22 (aggregated quantity) is provided in the table below. Bangladesh, the top imported in 2021-22, has only imported in 2020-21 and 2021-22 in the last 5 years. UAE is a consistent importer, while exports to Oman, Saudi Arabia, and Bahrain have dropped between 2017-18 to 2021-22.

S. No.	Country	2017-18	2018-19	2019-20	2020-21	2021-22
1	UAE	280	306	345	166	247

**Table 8: Export Trend of Top 5 Custard Apple Importing Countries from India – 2017-18 to 2021-22 (MT)**

S. No.	Country	2017-18	2018-19	2019-20	2020-21	2021-22
2	Oman	205	264	162	72	104
3	Saudi Arabia	79	125	130	7	10
4	Bangladesh				59	265
5	Bahrain	94	86	83	11	42
<b>India</b>		<b>780</b>	<b>980</b>	<b>869</b>	<b>353</b>	<b>732</b>

Source: Agri Exchange – APEDA

### 1.2.3 Trade – Domestic

Only limited data on domestic trade of custard apples – arrivals and prices in Government regulated *Mandis* – is available on the AGMARKNET portal of Government of India. Hence, the top markets for custard apples, over the last 5 years, as per the arrival data on AGMARKNET portal is provided in the table below. Due to availability of limited information, no conclusion can be drawn on the major custard apple *Mandis* in India from AGMARKNET data. Details on the domestic market are discussed under *Section 2.2* of this document.

**Table 9: Arrivals and Modal Price in Major Custard Apple Mandis – 2018 to 2022 (5 years)**

Mandi	Arrivals (MT)	Average Modal Price (₹/quintal)
Gaddiannaram (Hyderabad)	1,502	2,698
Jodhpur (Rajasthan)	646	1,696
Durg (Chhattisgarh)	222	3,926
Faizabad (Uttar Pradesh)	48	4,070
Vadodara (Gujarat)	36	4,000

Source: AGMARKNET

### 1.2.4 Maharashtra Varieties

Numerous varieties of custard apples are grown across the country and in Maharashtra, with many varieties that are grown in the wild and not cultivated. The table below mentions the major commercially cultivated custard apple varieties in Maharashtra.

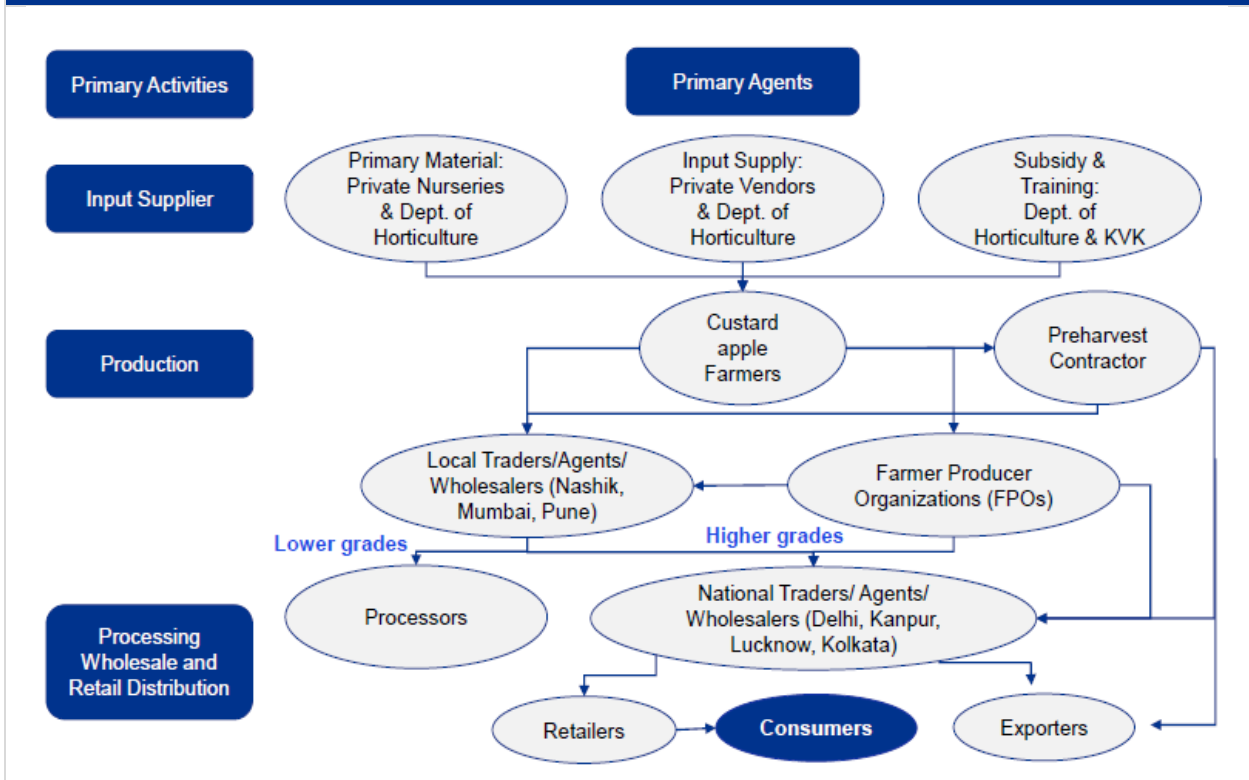


Table 10: Major Custard Apple Varieties in Maharashtra	
Balanagar	Balanagar is a medium sized variety and has high sweetness. It has a shorter shelf life compared to other varieties.
Phule Purandhar	Phule Purandhar is a popular variety that is known for its thick and creamy pulp. It is medium sized variety
Washington	Washington is a hybrid variety that has medium-large size fruit and a juicy pulp
Red Sitaphal	Red Sitaphal is a unique variety as it has reddish-brown peel unlike other varieties which have green shades. It has sweet and creamy pulp.
NMK 1 – Golden	NMK Golden is a relatively new hybrid variety of custard apple developed in Maharashtra. The fruits have extra-large in size and have a light green peel with smooth texture peel.

### 1.2.5 Value Chain Overview

The custard apple value chain starts from nurseries / institutions supplying saplings to farmers. Trainings are provided through Government Departments and Krishi Vigyan Kendras. Custard apple farmers sell their produce to local traders / *mandis* or FPOs or pre-harvest contractors. Custard apples are supplied from local *mandis* to major consumption markets across the country. The structure of custard apple value chain is provided in the figure below.

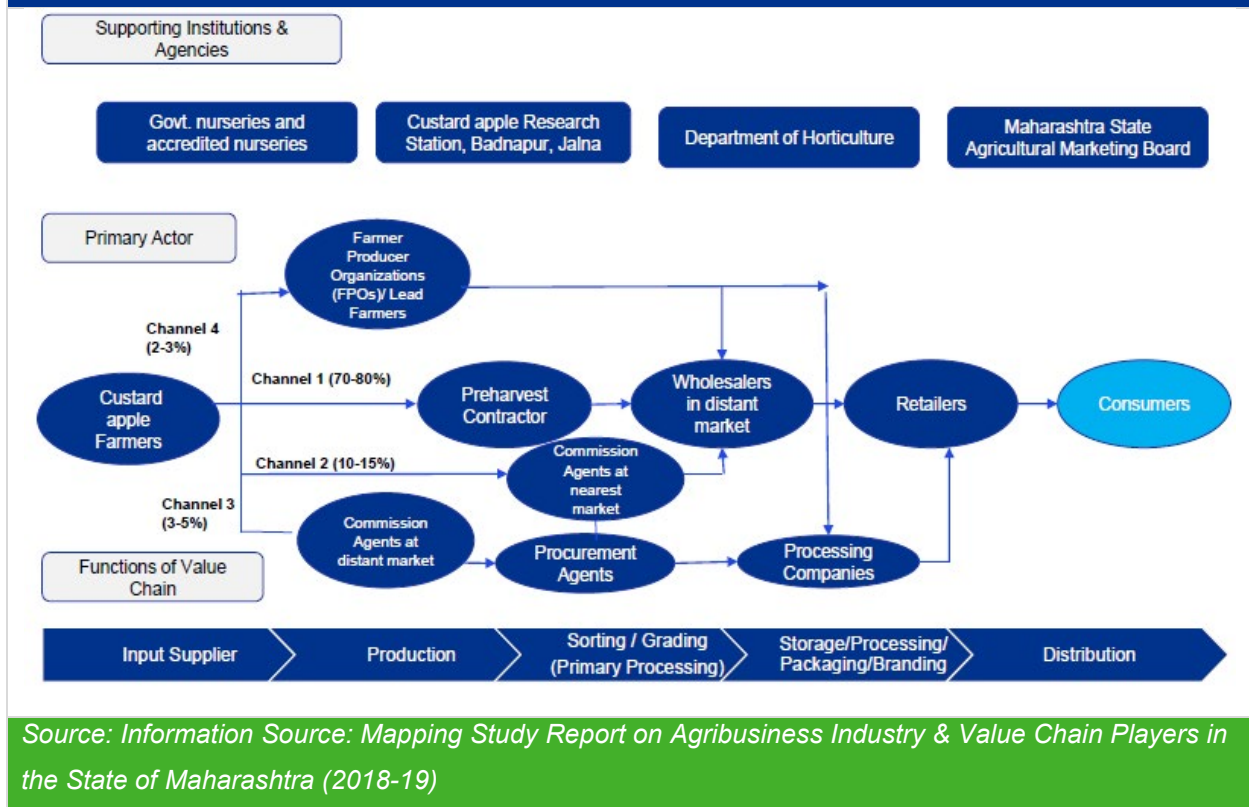
**Figure 1: Structure of Custard Apple Value Chain**



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

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

**Figure 2: Commodity Flow and Trade Analysis of Custard Apple**



## 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 customers 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 customers 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 Custard Apples in the major market segments, namely, 1) Export Markets, 2) Domestic Markets, 3) Organized retail and eCommerce, 4) HoReCa, and 5) Processors. Key components of this section are:



## 2.1 Export

Export markets are regions / countries that custard apple is exported or can be exported from India. Export markets for custard apples are classified as Indian Sub-Continent, Middle East, and Other Export Markets in this document.

### 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

Indian sub-continent is a price sensitive market with medium-low quality requirements and low regulatory compliance requirement on quality of produce.

India's exports to countries in this market is in small quantities, with no consistent exports to any country. India currently exports custard apples to only Bangladesh in considerable quantity, while exports to Nepal and Maldives is negligible. Exports to Bangladesh has picked only from 2020-21, while to Maldives and Nepal it is less than 10 MT yearly.

### **2.1.1.2 Competition**

Bangladesh does not produce significant quantity of custard apple, nor does it import good quantities from countries other than India. Hence, competition for exports from Maharashtra is limited to other States in India. Madhya Pradesh and Chhattisgarh, 2 States among the top producers, are competitors for FPOs intending to export to Bangladesh. Though exports to Bangladesh are primarily supplied from Maharashtra, Madhya Pradesh and Chhattisgarh can provide competition in the coming years due to their geographical proximity and increasing production (in Madhya Pradesh) to Bangladesh.

### **2.1.1.3 Maintaining Quality Standards and Supply**

Exports to Bangladesh are of medium grade as the customers are highly price sensitive. Exports to Bangladesh is done by road through West Bengal. Maldives requires high quality custard apples (Grade 1) since the consumption there is driven by tourists. Exports to Maldives are done through Air, due to low quantities of export and high shipping time.

October and November are the peak months of export to these markets. These months are also harvest season and peak months of supply in the domestic market.

Since there are no specific requirements in terms of quality and low transit time, there is no infrastructure investment that is required from FPOs for supplying to these markets.

### **2.1.1.4 Pricing**

Bangladesh is a highly price sensitive market. Since, only medium to low grade custard apples are exported to Bangladesh, there is no premium that is paid in comparison to prevailing domestic market prices.

## **2.1.2 The Middle East**

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

### **2.1.2.1 Characteristics of the Segment**

The Middle East market has significant Indian diaspora and Indian origin population especially UAE, Saudi Arabia, Oman, Qatar, and Kuwait. Hence, this market has significant demand for many Indian horticulture crops. The purchasing power of consumers in these markets are also high, and they demand high quality fruits and vegetables.

The total export to the Middle East market is in small quantities, but on aggregate it is the largest market for exports of custard apples from India. India currently exports custard apples in considerable quantities to UAE and Oman, and negligible quantities to Saudi Arabia, Bahrain, Kuwait, and Qatar.

The export quantity to the Middle East market is less than 1000 MT and does not show any clear increasing or decreasing trend. The Middle East market has immense potential for export of custard apples due to limited penetration currently.

### **2.1.2.2 Competition**

#### **Other Countries:**

Lebanon, a country in the Middle East, produces and exports custard apples to other countries in its region. Lebanon has the advantage of geographical proximity in supplying to other Middle East countries, which helps in reducing transportation costs and short transit times.

Taiwan is known for its custard apples and has started exporting to the Middle East countries like UAE in the last couple of years. Taiwan custard apples primary market is the South East Asian countries and China. Taiwan produces Atemoya variety of custard apples, a hybrid variety, which in comparison to Indian custard apples, have a smoother peel. The Taiwan custard apples are also called as pineapple-custard apple. The Taiwan Government has taken initiatives to support its farmers by finding new export markets, which has resulted in the export to Dubai in recent years. Taiwan exported custard apples to Dubai through sea route, by using controlled atmosphere technology to maintain the shelf life of the fruit.

Countries in the Middle East also import custard apples from Spain, Thailand, Vietnam, and South Africa. Custard apple is one of the 14 key fruits that Vietnam is focusing on as part of its recent push for exports of fruits.

#### **Within India:**

Within India, Maharashtra has good competitive advantage due to its high quality fruits and large production. Madhya Pradesh and Chhattisgarh, other 2 top producing States, lack access to airports like Mumbai, which handle huge cargo volume.

### **2.1.2.3 Maintaining Quality Standards and Supply**

The Middle East market requires good quality (medium-high grade) custard apples. Quality specifications for supply to the Middle East market is provided in the table below.

Preferred Varieties	NMK Golden
Size and Weight	300 – 500 g per fruit
Physical Appearance	<ul style="list-style-type: none"> <li>• Light green peel with low black marks</li> <li>• Peel should not have cracks exposing the fruit</li> </ul>

Supply to the Middle East market is done primarily through air, where it is supplied in small quantities in containers having a mix of different fruits and vegetables. Since the transit time is short, it does not require any cold or controlled atmosphere storage.

Custard apples are not generally exported as a full container since its consumption is limited. Exporters dealing in custard apples also do not establish backward linkage for procuring from farms due to low export quantity. FPOs looking to export custard apples to the Middle East market can supply through exporters dealing in multiple horticulture commodities.

To maintain required quality of custard apples, FPOs can invest in packhouse infrastructure. Sorting and grading of custard apples is essential as only high quality, damage free fruits are exported to the middle east. Packaging is done in 3 to 5 kg CFB boxes. FPOs can also provide sleeves for individual fruits to limit damage during transit. Since custard apple tends to live pest presence, FPOs can utilize irradiation facilities to supply pest-free fruits.

#### 2.1.2.4 Pricing

Indian custard apples compete with custard apples from Lebanon in the Middle East market. Indian custard apples retail cheaper compared to Lebanon custard apples, while Spain custard apples are nearly double the retail price of the Indian ones.

The procurement price of custard apples is driven by prevailing domestic market prices. Since, exporters generally procure from Vashi market, prices are influenced by the day-to-day pricing of that market. Currently, no premium is paid over the market prices for custard apple exports to the Middle East. FPOs can demand higher prices by consistently supplying the required quality to exporters.

#### 2.1.3 Other Export Markets

Apart from the above markets, India exports custard apples to countries such as Singapore, Canada, UK, and South Africa. The exports to these countries are less than 10 MT per year. Exports to these markets are not done with specific focus on exporting custard apple, rather as an additional fruit, along with other fruits and vegetables.



UK and other European countries offer good potential for export of custard apples, as there is limited production in that region. Spain is the major producer and consumer of custard apples in Europe. Custard apples can be marketed as an exotic fruit, focusing on increasing its value more than quantity.

### 2.1.4 Establishing Connects in the Market

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	Establishing Connects
Through an exporter from India	<ul style="list-style-type: none"> <li>● Trade fairs (physical and virtual) conduct by APEDA. Details are published on <a href="https://apeda.gov.in/apedawebsite/trade_promotion/International_trade_event">https://apeda.gov.in/apedawebsite/trade_promotion/International_trade_event</a></li> <li>● Other National Trade Fairs conducted by various Organizations / Association. These events are published on various platforms such as: <ul style="list-style-type: none"> <li>○ <a href="https://krishijagran.com/events">https://krishijagran.com/events</a></li> <li>○ <a href="https://www.kisaanhelpline.com/agriculture-events">https://www.kisaanhelpline.com/agriculture-events</a></li> <li>○ <a href="https://www.2exhibitions.com/agriculture-and-forestry/">https://www.2exhibitions.com/agriculture-and-forestry/</a></li> </ul> </li> <li>● Online trade websites such as <a href="http://www.indiamart.com">www.indiamart.com</a> and <a href="http://www.exportersindia.com">www.exportersindia.com</a></li> <li>● Buyer-Seller meets organized under the MAGNET project</li> </ul>

Export Route	Establishing Connects
Through an importer at the importing country	<ul style="list-style-type: none"> <li>● Trade fairs (physical and virtual) conduct by APEDA. Details are published on <a href="https://apeda.gov.in/apedawebsite/trade_promotion/International_trade_event">https://apeda.gov.in/apedawebsite/trade_promotion/International_trade_event</a></li> <li>● Other National Trade Fairs conducted by various Organizations / Association. These events are published on various platforms such as: <ul style="list-style-type: none"> <li>○ <a href="https://krishijagran.com/events">https://krishijagran.com/events</a></li> <li>○ <a href="https://www.kisaanhelpline.com/agriculture-events">https://www.kisaanhelpline.com/agriculture-events</a></li> <li>○ <a href="https://www.2exhibitions.com/agriculture-and-forestry/">https://www.2exhibitions.com/agriculture-and-forestry/</a></li> </ul> </li> <li>● International Trade Fairs such as: <ul style="list-style-type: none"> <li>○ Fruit Logistica: yearly event at Berlin, Germany is one of the most important events for fruit trade across the world</li> <li>○ Asia Fruit Logistica: yearly event conducted in Asia – at Hong Kong / Bangkok</li> <li>○ Fruit Attraction: yearly event at Madrid, Spain</li> </ul> </li> <li>● International events on horticulture trade are regularly published on the website of CBI – a centre for promotion of imports from developing countries to Europe. <a href="http://www.cbi.eu/events">www.cbi.eu/events</a></li> <li>● <a href="http://www.freshplaza.com">www.freshplaza.com</a>, and <a href="https://www.hcisingapore.gov.in/events">https://www.hcisingapore.gov.in/events</a> also provides an event calendar on important global fairs for horticulture crops</li> </ul>

### 2.1.5 Advantages and Risks Associated

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

Export Route	Risks / Disadvantages	Advantages
Through an exporter from India	<ul style="list-style-type: none"> <li>● Significant margin from the final export price is taken by the exporter</li> <li>● FPOs cannot make significant export-oriented investments as export orders may not be assured. Exporters can procure equivalent quality from any other seller at lower prices, if available</li> </ul>	<ul style="list-style-type: none"> <li>● Exporting through this route is suitable for all FPOs, especially for FPOs that handle small quantities</li> <li>● Payment terms from exporters to FPOs can be for shorter credit time</li> </ul>

Export Route	Risks / Disadvantages	Advantages
	<ul style="list-style-type: none"> <li>● Countries can ban import of custard apples from India due to reasons such as repeated non-compliance to MRLs or pest infestations. These are outside the control of the FPO, and can significantly affect FPO's business in case it has high exposure to that export market</li> </ul>	<ul style="list-style-type: none"> <li>● Export compliance is handled by the exporter – only quality adherence is taken care by FPOs</li> </ul>
Through an importer at the importing country	<ul style="list-style-type: none"> <li>● 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)</li> <li>● Payment default by importers in case the FPO does not take precautionary measures like Letter of Credit</li> <li>● Credit timelines for payment from the importer can be as high 30 to 60 days</li> <li>● FPO requires proper and complete knowledge on export compliance requirements of the importing country</li> <li>● Rejection of consignment by importing country – shortfall in compliances. Especially for European and North American markets</li> <li>● Countries can ban import of custard apples from India due to reasons such as repeated non-compliance to MRLs or pest infestations. These are outside the control of the FPO, and can significantly affect FPO's business in case it has high exposure to that export market</li> </ul>	<ul style="list-style-type: none"> <li>● Higher margins</li> <li>● Long-term business opportunity. FPO can become an exporter for other FPOs / market players</li> <li>● Increased exports through volume and by adding other crops in which the FPO is dealing</li> </ul>

## 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

Domestic markets consume all grades of custard apple, as it has a wide range of customer segment from retailers to processors. Access to different domestic markets across the country can be beneficial to FPOs as they can act as good hedge against price risk. Lower prices in one region do not necessary lead to low prices in another region. Hence, FPOs can sell their produce across different domestic markets.

### 2.2.2 Competition

The competitors for domestic market are growers and traders from other major custard apple producing States. Apart from Maharashtra, Madhya Pradesh, Gujarat, Chhattisgarh, Andhra Pradesh, and Telangana are the other top custard apple producing States.

Peak and Lean months of supply of major custard apple producing States in India												
States	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Madhya Pradesh	Peak	Lean	Peak	Lean								
Gujarat	Peak	Lean							Lean	Peak	Peak	Peak
Chhattisgarh	Lean								Lean	Peak	Peak	Peak
Andhra Pradesh	Peak	Lean	Lean				Peak		Lean	Lean	Peak	Peak
Telangana	Peak	Lean	Lean				Peak		Lean	Lean	Peak	Peak
Maharashtra	Peak	Lean						Lean	Lean	Peak	Peak	Peak

Months of Peak Supply

Months of Lean Supply

Custard Apples from other states are not usually supplied to Maharashtra. In the Northern States, Maharashtra's custard apples compete with those from Madhya Pradesh and Gujarat. Custard apples from Maharashtra are known for their excellent quality when compared to these competing states.

### 2.2.3 Maintaining Quality Standards and Supply

Domestic markets accept all grades of custard apples as there is demand for all grades at respective price points. Grading pattern would differ from market to market and from season to season. The approximate

grading scheme that is practiced in Mumbai and Pune (the major markets for custard apples in Maharashtra) is provided in the table below.

Grade	Size	Other Specifications
Grade A	Greater than 700 g	Green colour No black marks and cracks
Grade B	400 to 700 g	Green colour Minimal black marks and cracks
Grade C	200 to 400 g	Green to Yellowish green colour

Some markets also classify into 4 grades, wherein custard apples of yellowish green colour with distorted shape and high surface damage are sold as Grade D. Balanagar variety that is known for its high sweet taste is a smaller size variety and is not usually graded by the above mentioned size scale.

Grade-wise sales (sorted) of custard apples is not practiced across all *Mandis* or commission agents / traders. Hence, FPOs intending to sort and supply their produce to domestic markets should ensure that suitable buyers are available to pay a premium on their produce.

Sorting and packaging of custard apples is usually done by traders, and in some cases by farmers or FPOs. These FPOs can be done by FPOs to fetch higher prices for their produce, and also to get quality commensurate pricing. FPOs can invest in packhouse infrastructure to sort and package their produce. There are no standard packaging practices required for domestic markets. They are usually supplied in crates, of 20 kg each, when supplying to local markets.

To send custard apples to distant markets, the fruits can be packed in CFB boxes to avoid damage to the fruit. Boxes of 10, 15 and 20 kg each are the standard packaging sizes used in domestic custard apple trade. FPOs can also utilize the opportunity of packaging in CFB boxes, by branding their quality produce. This can help the FPOs in slowly building a brand, at B2B level, in custard apples, wherein traders in different markets can depend on the FPO to send high quality custard apples.

Major markets that the fruit is supplied from Maharashtra are Gujarat, Delhi, Chennai, Rajasthan, Hubli and Bangalore. The quality (grade) requirements of these markets is provided in the table below.

Market	Quality Requirement
Gujarat	Grade B
Delhi	Grade A (jumbo sized)
Chennai	Grade A (jumbo sized)
Rajasthan	Grade B

Market	Quality Requirement
Hubli	Grade B and C
Bangalore	Grade A (jumbo sized)

The supply to these markets are usually done by road or train. Custard apples are also sent by flight to Delhi occasionally. FPOs trying to sell their produce to these domestic markets should procure in the multiple of truck load quantities (minimum 10 MT). Optimal utilization of truck load that is being sent to distant markets is required to reduce logistics cost.

## 2.2.4 Pricing

Pricing in domestic markets depends on the day-to-day supply-demand dynamics. Hence, FPOs can command good price only by supplying good quality produce to the market. FPOs can sort and grade their produce and get premium pricing for top grade produce. But practice of buying graded custard apples is not prevalent in all markets, as the activity is done by the commission agents or traders, and further supplied to different channels. Hence, supplying only to different domestic markets may fetch FPOs the best prices for their produce. Nonetheless, domestic markets is biggest channel for custard apples, and supply to them is inevitable for FPOs dealing in most horticulture commodities.

The table below provides the average range of custard apple prices in Maharashtra. Custard apple being a seasonal fruit, it is highly in demand during its harvest season. Hence, the market prices vary on the local production (supply) scenario.

Grade	Price in Peak Season	Price in Lean Season
Grade A	₹50 to 70 per kg	₹80 to 120 per kg
Grade B	₹30 to 50 per kg	₹50 to 60 per kg
Grade C	Less than ₹30 per kg	₹30 to 40 per kg

Since custard apple trade is a small and seasonal market, FPOs can target to brand and package their high quality produce to create demand from different markets, as suggested in the above sub-section. This can help FPOs in demanding premium pricing to the prevailing market prices due to their assured supply capabilities – both in terms of quality and quantity.

The cost of CFB boxes, the packaging material for custard apples, is ₹10-12 for a medium quality 10 kg box and ₹15-20 for a high quality box of similar size. The labour cost (sorting and packaging) depends on the local labour market dynamics. It can cost ₹1-3 per kg for sorting, grading, and packaging of custard apples in Pune district (major custard apple producing district in the State).

Transportation cost is ₹4-6 per kg for Delhi and Uttar Pradesh markets, and additional ₹2-4 per kg for markets further north and Eastern markets. The cost of supplying custard apples by air to Delhi is approximately ₹50-60 per kg.

The price of all agriculture and horticulture commodities traded in the Government regulated *Mandis* can be tracked on [www.agmarknet.gov.in](http://www.agmarknet.gov.in). The tracking of arrivals and prices for custard apple is limited on the website. Hence, FPOs should actively work to establish source for information on prevailing market prices in markets that it targets to sell its custard apples to.

### 2.2.5 Establishing Connects in the Market

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 custard apple in surrounding geography.

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

### 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 channels 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 consumers. Hence, there is significant focus on quality of the produce. The companies in this market segment usually procure from *Mandis* and from traders / village-level aggregators. Over the recent years, there has been considerable focus of these companies on procuring directly from farmers / FPOs by establishing collection centers to reduce costs and have more control over quality.

### 2.3.2 Competition

FPOs looking to supply to market players in this segment are competing with *Mandis* and traders across the country. These market players procure across the country, where required quality at the right price is available. Custard apple has limited commercial cultivation across the country and is a seasonal crop, with Maharashtra being the largest producer. Hence, this provides an advantage to FPOs in Maharashtra, as these market players can procure in bulk from the state and feed it its demand from different parts of the country.

The market players of this segment will also look to procure custard apples closer to the final consumption due to its short shelf life. This results in Maharashtra farmers / FPOs competing with suppliers in Madhya Pradesh for share in the organized retail market of Northern cities like Delhi.

### 2.3.3 Maintaining Quality Standards and Supply

Organized retail and eCommerce companies generally require high quality (Grade A and B) produce.

Varietal Preferences	Big fruit variety - NMK Golden Small fruit variety – Balanagar, Phule Purandhar	
Colour	Light green	
Size	For larger varieties: <ul style="list-style-type: none"><li>• 500-700 g per piece</li></ul>	For smaller varieties: <ul style="list-style-type: none"><li>• 140-200 g per piece</li></ul>



FPOs should ensure that it delivers on the quality requirements of these market players consistently to build long-term business relationship. Since custard apple is a seasonal crop, FPOs would be in touch with these market players only for few months in a year. Hence, it is necessary that season-on-season FPOs are able to supply the required quality and quantity to these market players. This will immensely benefit the market players too as they do not have to establish procurement set-up for a seasonal crop in multiple locations with a production cluster.

To supply good quality produce, FPOs can invest in packhouse infrastructure and training of labour for handling the fruits during sorting and packaging. Custard apples, due to their soft peel, can crack easily if not handled with care. FPOs should also pack the custard apples in the desired packaging by the market players – crates or corrugated fibre board boxes.

Since custard apple's trade quantity is limited and is seasonal, the market players do not establish collection centers focusing on procurement of custard apple. Their existing collection centers for other crops are used for procurement of custard apple during season, or they procure through village-level aggregators. FPOs would be required to either supply to these collection centers or deliver to nearby distribution centers or the market players can collect the produce, if sufficient quantity is consistently available, directly from FPO's packhouse.

#### 2.3.4 Pricing

The pricing for this category is dependent on the prevalent domestic market prices. Since there are specific production regions for custard apples, the markets become competitive during the peak harvest season. Hence, FPOs should be able to supply to these market players at competitive price in comparison to other supplies in its region.

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.

The cost of CFB boxes, the packaging material for custard apples, are ₹10-12 for a medium quality 10 kg box and ₹15-20 for a high quality box of similar size. The labour cost (sorting and packaging) depends on the local labour market dynamics. It can cost ₹1-3 per kg for sorting, grading, and packaging of custard apples in Pune district (major custard apple producing district in the State).

### 2.3.5 Establishing Connects in the Market

Many market players in the Organized retail and eCommerce segment are actively working towards procuring from farmers and FPOs.

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](http://www.indiamart.com) and [www.tradeindia.com](http://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 post-harvest infrastructure can fetch better returns for their Grade A and B custard apples. This segment is growing rapidly, hence making good business relationship with customers of the segment can lead to long term benefits for FPOs. Some companies in these segments also invest in capacity building and post-harvest infrastructure such as collection centers, which the FPOs can leverage. FPOs can enter seasonal contracts with these companies and sell at profitable prices with reduced risk. Payment default risk is also lower with these companies.

Companies in this segment function on credit terms, though credit terms can be as short as 3 days or as long as 30 days. 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 custard apple production regions and from numerous sellers, the pricing power with FPOs is low during negotiations.

## 2.4 Processors

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

### 2.4.1 Characteristics of the Segment

Processors are highly price sensitive customers, but they do not necessarily procure low grade custard apples. Unlike many horticulture commodities, where only low grade produce is procured by processors, custard apple processors also produce top grade custard apples. Hence, quality requirement varies from processors to processors, based on the processor's customer requirements. Size of processors vary widely from industrial processors to cottage industries; thus, their requirement also varies.

The major products that the market players in the segment produce from custard apples are custard apple pulp, custard apple powder, and custard apple ice cream. Custard apple ice cream can also be an upstream product, wherein, the processors make custard apple pulp / powder and supply to ice cream manufacturers to produce custard apple ice cream.

### 2.4.2 Competition

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 procure at the best rate possible and also to ensure supply for longer duration in a year due to custard apple's seasonality.

### 2.4.3 Maintaining Quality Standards and Supply

Processors do not usually function with strict physical quality requirements (colour, size, physical defect). Nonetheless, physical characteristics becomes important as it is a signaling factor to represent quality of the fruit. Many processors require only low quality custard apples with price being the main consideration factor for procurement.

Varietal Preferences	Phule Purandhar
Colour	Green to yellowish green peel Whitish pulp is an important requirement
Size	Less than 300 g is also acceptable
Defects	High physical damage or spoiled fruits are not accepted

Some processors are highly particular about the sweetness of custard apples and require high quality custard apples. Processors intending to export the resultant products also demand residue free custard apples.

Many processors function in planned schedules and can provide their requirement quantity and timelines in advance. Supply to such processors can be done in batches, as and when it procures sufficient quantity of required grade of custard apples. FPOs should target to supply in full truck loads (at least 10 MT) to minimize logistics cost.

#### 2.4.4 Pricing

Custard apple processors procure whenever the market prices of custard apples drop significantly during its peak season. This is because, processed form of custard apples such as pulp and powder can be stored for long duration and can be processed to final product as and when required.

Large-scale processors tend to maintain a procurement price of lower than the market price. This is because of the large quantities they usually procure, thus giving an assured market for the suppliers. In case processors procure good grade custard apples, they pay the prevailing market rates to 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 custard apples.

#### 2.4.5 Establishing Connects in the Market

FPOs can supply custard apples 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](http://www.indiamart.com) and [www.tradeindia.com](http://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 custard apples. Supply to processors can be done in batches as and when sufficient quantity of required quality custard apple is available with the FPO. Logistics cost can be minimized by doing batched transportation.

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