Okra Market Access Plan

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

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1 Crop Background

Okra, also called as “lady’s finger” is a green vegetable with long, tapered shape and slight fuzzy texture. It is a common vegetable in Indian Subcontinent, African, and the Middle Eastern cuisines. It is a warm climate crop and is grown in Indian Subcontinent, Africa, Middle East, and parts of South East Asia and Central America. Apart from being cooked in variety of ways, okra is used as soup thickening agent due to its sticky texture.

1.1 Global Scenario

1.1.1 Production

According to Food and Agriculture Organization (FAO), the total area under okra cultivation is nearly 25 lakh hectares producing 108 lakh MT of okra. India is the top producer of okra producing 64.66 lakh MT, which is 60% of global okra production in 2021. Other top producing counties are located in Africa such as Nigeria, Mali, and Sudan.

Table 1: Top 10 Countries by Okra Production – 2021

S. No.	Country	Production (MT)	Area (ha)	Productivity (MT/ha)
1	India#	64,66,000	5,31,000	12.18
2	Nigeria	19,17,407	14,96,501	1.28
3	Mali	6,69,688	57,932	11.56
4	Sudan	3,22,403	30,661	10.52
5	Pakistan	2,63,448	23,543	11.19
6	Ivory Coast	1,93,194	68,713	2.81
7	Niger	1,32,139	1,44,089	0.92
8	Iraq	93,396	12,498	7.47
9	Cameroon	84,030	31,321	2.68
10	Egypt	82,355	5,949	13.84
World		**1,08,22,249**	**24,78,132**	**4.37**

Source: FAO Stat

 # Production figures for India published by FAO differs slightly from those published by Government of India

The global production of okra is growing steadily, albeit at a slow pace. The average annual growth rate from 2017 to 2021 is only 3%. The below table indicates the world production trend through the production quantities of top 10 okra producing countries.

Table 2: Production Trend of Top 10 Okra Producing Countries – 2017 to 2021 (MT)						
S. No.	**Countries**	**2017**	**2018**	**2019**	**2020**	**2021**
1	India	60,03,000	60,95,000	61,76,000	63,55,000	64,66,000
2	Nigeria	15,61,900	17,41,480	18,57,592	18,71,075	19,17,407
3	Mali	2,54,545	2,77,673	5,12,855	6,59,809	6,69,688
4	Sudan	2,93,046	3,01,720	3,09,362	3,15,773	3,22,403
5	Pakistan	1,21,484	1,20,637	1,24,779	2,81,469	2,63,448
6	Ivory Coast	1,58,000	1,76,055	1,81,337	1,88,736	1,93,194
7	Niger	1,00,650	1,50,454	1,03,854	1,40,111	1,32,139
8	Cameroon	81,558	83,424	85,254	83,412	84,030
9	Egypt	54,051	92,429	61,035	87,400	82,355
10	Iraq	58,422	46,555	59,353	93,719	93,396
World		**92,18,405**	**96,38,309**	**1,00,33,275**	**1,06,43,725**	**1,08,22,249**
Source: FAO Stat						

1.1.2 Global Trade

The global trade of okra is minimal due to limited and regional consumption. Okra is a major vegetable only in Indian (and few other Indian-subcontinent countries) and African cuisines. The production and trade of okra is limited within consuming countries leading to less global exports and imports of the vegetable.

As per data published by FAO, Kenya was the top exporter of okra in 2021, exporting 0.22 lakh MT. Though India is a significant exporter, exporting 4000 MT in 2021-22, the country does not feature among the top exporters as per FAO. This could be due to discrepancies in capturing / collating data by FAO.

Table 3: Top 5 Countries by Okra Exports – 2021			
S. No.	**Countries**	**Quantity (MT)**	**Value ('000 USD)**
1	Kenya	21,619	83,677
2	Oman	5,719	1,001
3	Jamaica	574	1,136
4	Bangladesh	7	12
5	Tonga	4	5
World		**27,925**	**85,837**
Source: FAO Stat			

USA is the top importer of okra, importing primarily from Mexico. Other top importing countries are in the Middle East and African region.

Table 4: Top 5 Countries by Okra Imports – 2021			
S. No.	**Countries**	**Quantity (MT)**	**Value ('000 USD)**
1	United States of America	34,680	22,958
2	Algeria	7,300	7,500
3	Qatar	2,944	5,280
4	Somalia	2,400	3,400
5	Democratic Republic of the Congo	381	1,896
World		**47,762**	**41,138**
Source: FAO Stat			

The global export-import figures for the last five years, do not provide any clear trend of increase or decrease in trade quantities. Kenya and USA have been the largest exporter and importer of okra, respectively.

Table 5: Export Trend of Top 5 Okra Exporting Countries – 2017 to 2021 (MT)						
S. No.	**Countries**	**2017**	**2018**	**2019**	**2020**	**2021**
1	Kenya	16,324	22,129	17,055	20,623	21,619
2	Oman	41	259	363	214	5,719
3	Iran	0	0	0	1,886	0
4	Jamaica	0	0	0	0	574
5	Algeria	118	0	0	0	0
World		**16,487**	**22,388**	**17,439**	**22,743**	**27,925**
Source: FAO Stat						

Table 6: Import Trend of Top 5 Okra Importing Countries – 2017 to 2021 (MT)						
S. No.	**Countries**	**2017**	**2018**	**2019**	**2020**	**2021**
1	United States of America	36,781	33,779	37,244	36,561	34,680
2	Algeria	6,403	7,300	7,800	7,500	7,300
3	Qatar	3,832	3,771	3,588	9,100	2,944
4	Somalia	146	3,167	3,080	1,037	2,400
5	Democratic Republic of the Congo					381
World		**47,227**	**48,113**	**51,774**	**54,228**	**47,762**
Source: FAO Stat						

1.2 Indian Scenario

1.2.1 Production

Okra production in India is seeing a slow but steady increase over the last 5 years from 2017-18 to 2021-22 growing at an annual rate of 2%. The increased production is driven by commensurate increase in acreage, as productivity has increase only by a small margin.

Table 7: India – Okra Production, Area under Cultivation & Productivity – 2017-18 to 2021-22

Year	Production (MT)	Area (ha)	Productivity (MT/ha)
2021-22#	68,18,734	5,54,827	12.29
2020-21	64,65,588	5,30,615	12.19
2019-20	63,54,645	5,20,707	12.20
2018-19	61,76,142	5,13,071	12.04
2017-18	60,94,940	5,09,022	11.97

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

Gujarat, West Bengal, and Madhya Pradesh, the top 3 producers, account for more than 42% of India's okra production. In 2021-22, Maharashtra was the 12 largest okra producing state in India. Maharashtra's okra productivity (9.7 MT/ha) is around 20% lower than national productivity.

Table 8: Top 10 States in Okra Production in India – 2021-22#

S. No.	States	Production (MT)	Area (ha)	Productivity (MT/ha)
1	Gujarat	10,91,642	91,177	11.97
2	West Bengal	9,34,660	82,675	11.31
3	Madhya Pradesh	8,45,501	59,254	14.27
4	Bihar	7,94,104	59,197	13.41
5	Odisha	6,62,670	65,520	10.11
6	Andhra Pradesh	4,13,662	25,857	16.00
7	Chhattisgarh	3,58,810	32,596	11.01
8	Uttar Pradesh	3,35,864	24,800	13.54
9	Tamil Nadu	2,41,129	25,037	9.63
10	Assam	2,00,994	12,570	15.99
India		**68,18,734**	**5,54,827**	**12.29**

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

The states in the top 10 of okra production in the country has remained nearly the constant over the last 5 years. Gujarat, West Bengal, Madhya Pradesh, Bihar, and Odisha have remained among the top 5 okra producing states from 2017-18 to 2021-22.

Table 9: Top 10 States in Okra Production from 2017-18 to 2021-22

2021-22#	2020-21	2019-20	2018-19	2017-18
Gujarat	Gujarat	Gujarat	Gujarat	Gujarat
West Bengal	West Bengal	West Bengal	West Bengal	West Bengal
Madhya Pradesh	Madhya Pradesh	Bihar	Bihar	Bihar
Bihar	Bihar	Madhya Pradesh	Madhya Pradesh	Madhya Pradesh
Odisha	Odisha	Odisha	Odisha	Odisha
Andhra Pradesh	Chhattisgarh	Chhattisgarh	Chhattisgarh	Chhattisgarh
Chhattisgarh	Uttar Pradesh	Uttar Pradesh	Uttar Pradesh	Uttar Pradesh
Uttar Pradesh	Andhra Pradesh	Andhra Pradesh	Andhra Pradesh	Haryana
Tamil Nadu	Tamil Nadu	Haryana	Haryana	Andhra Pradesh
Assam	Assam	Assam	Assam	Telangana

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

Maharashtra is a minor producer of okra, contributing only 2-2.5% of India's total okra production. Maharashtra's okra production does not show a clear trend of increase or decrease over the last 5 years from 2017-18 to 2021-22. Production has decreased in 2021-22 when compared to 2017-18 by nearly 2%.

Table 10: Maharashtra – Okra 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#	1,36,794	14,109	9.70	2.01%
2020-21	1,56,578	15,397	10.17	2.42%
2019-20	1,30,499	13,042	10.01	2.05%
2018-19	1,31,518	12,861	10.23	2.13%
2017-18	1,39,401	13,982	9.97	2.29%

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

Major production of okra in Maharashtra is the western part of the State, with Jalgaon being an exception, Pune is the largest okra producing district, followed by Jalgaon that has only half of Pune's production. Among the top 10 districts, Jalgaon, Satara, and Osmanabad have productivities that are nearly 50% higher than the State's productivity.

Table 11: Top 10 Districts in Okra Production in Maharashtra – 2021-22#				
S. No.	**States**	**Production (MT)**	**Area (ha)**	**Productivity (MT/ha)**
1	Pune	32,000	3,200	10.00
2	Jalgaon	16,440	1,096	15.00
3	Thane	15,901	1,725	9.22
4	Nashik	12,567	1,381	9.10
5	Dhule	7,200	600	12.00
6	Solapur	6,696	837	8.00
7	Raigad	5,343	555	9.63
8	Satara	5,050	349	14.47
9	Osmanabad	4,630	255	18.16
10	Nandurbar	4,485	390	11.50
Maharashtra		**1,36,794**	**14,109**	**9.70**
Source: Department of Agriculture, Government of Maharashtra; # 3rd estimate				

1.2.2 Trade – International

India's okra export data is available on APEDA only for the years 2020-21 and 2021-22. Export quantity has reduced from 2020-21 to 2021-22, driven by drop in exports to Nepal and Singapore.

Table 12: Okra Exports from India – 2017-18 to 2021-22		
Year	**Quantity (MT)**	**Value (₹ Crs)**
2021-22	3,926	23.78
2020-21	5,208	29.76
2019-20	0	0
2018-19	0	0
2017-18	0	0
Source: Agri Exchange – APEDA		

In 2021-22, UAE was the largest importer of okra from India, closely followed by Nepal. The Middle East and Europe are the biggest importers of okra from India.

Table 13: Okra Export Quantity and Value for Top 10 Destinations from India – 2021-22			
S. No.	**Country**	**Quantity (MT)**	**Value (₹ Crs)**
1	UAE	742.43	4.35
2	Nepal	680.77	0.75

Table 13: Okra Export Quantity and Value for Top 10 Destinations from India – 2021-22			
S. No.	**Country**	**Quantity (MT)**	**Value (₹ Crs)**
3	Qatar	514.32	2.95
4	UK	471.10	5.64
5	Kuwait	395.64	2.41
6	Germany	337.95	2.60
7	Singapore	221.84	1.09
8	Bhutan	196.78	0.72
9	Canada	191.56	1.73
10	Bahrain	54.46	0.40
	India	**3,926**	**23.78**
Source: Agri Exchange – APEDA			

1.2.3 Trade – Domestic

Okra is traded across the country, through private / unorganized channels and through the Government notified *Mandis*. The price in domestic trade is dependent on supply-demand dynamics.

Major markets for okra are the *Mandis* either in large urban centers or near high okra producing regions. Below tables provide the total arrivals and average modal price in *Mandis* with highest okra arrivals (across India and in Maharashtra) during 2022, as per AGMARKNET.

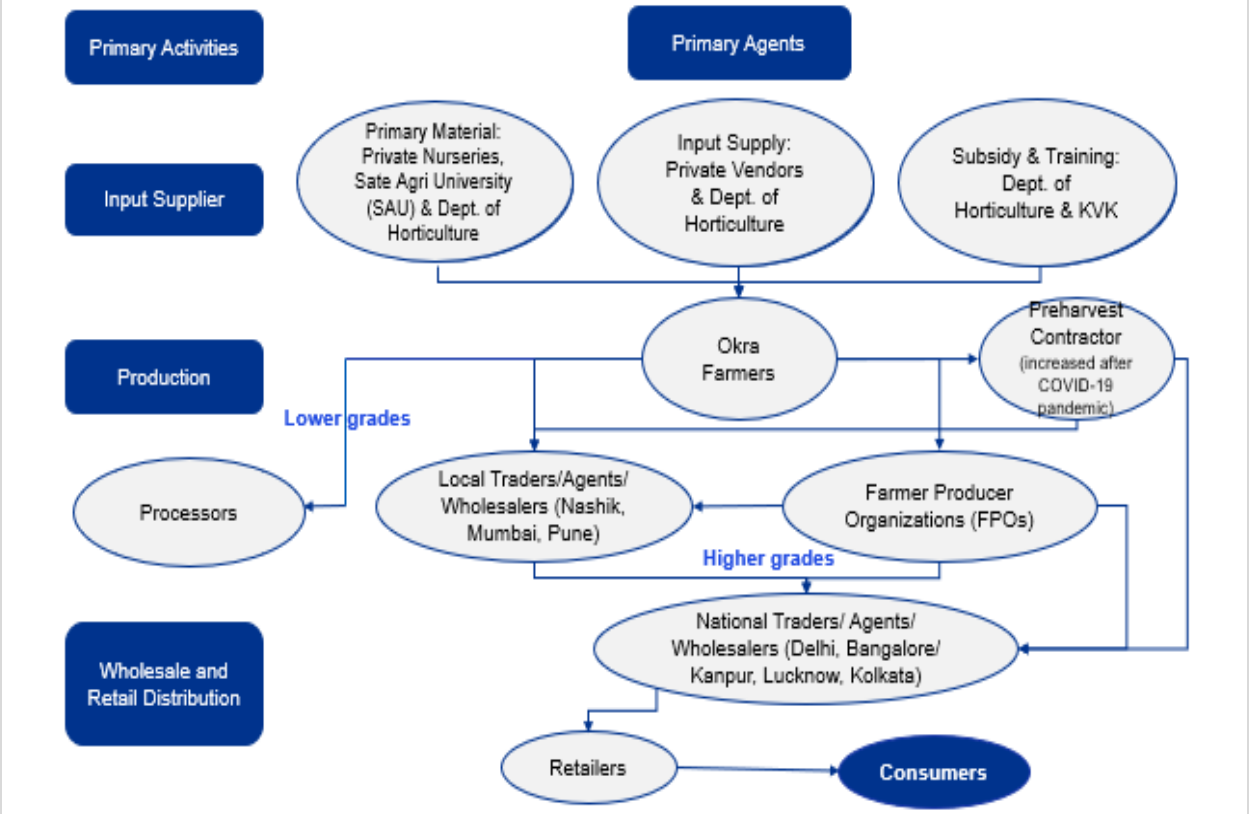
Table 14: Arrivals and Modal Price in Major Okra Mandis in India – 2022			
S. No.	***Mandis***	**Arrival (MT)**	**Average Modal Price (₹/quintal)**
1	Mumbai (Maharashtra)	32463	4132
2	Azadpur (Delhi)	23471	3316
3	Surat (Gujarat)	18894	2769
4	Bowenpally (Telangana)	14927	2581
5	Panposh (Odisha)	13166	1191
6	Indore (Madhya Pradesh)	11109	2393
7	Kalol (Gujarat)	10841	2961
8	Ahmedabad (Gujarat)	9429	3881
9	Pune (Maharashtra)	9075	2784
10	Gudimalkapur (Telangana)	9004	1710
Source: AGMARKNET			

Table 15: Arrivals and Modal Price in Major Okra Mandis in Maharashtra – 2022			
S. No.	***Mandis***	**Arrival (MT)**	**Average Modal Price (₹/quintal)**
1	Mumbai	32463	4132
2	Pune	9075	2784
3	Pune (Manjri)	2734	4509
4	Khed (Chakan)	2512	3316
5	Nagpur	1841	2918
Source: AGMARKNET			

1.2.4 Value Chain Overview

The okra value chain starts from seed companies supplying seedlings to nurseries, who in turn supply saplings to farmers. Trainings are provided through Government Departments and Krishi Vigyan Kendras. Okra farmers sell their produce to local traders or pre-harvest contractors harvest and supply to the required markets. Okra are supplied from local *Mandis* to major consumption markets across the country. The structure of okra value chain is provided in the figure below.

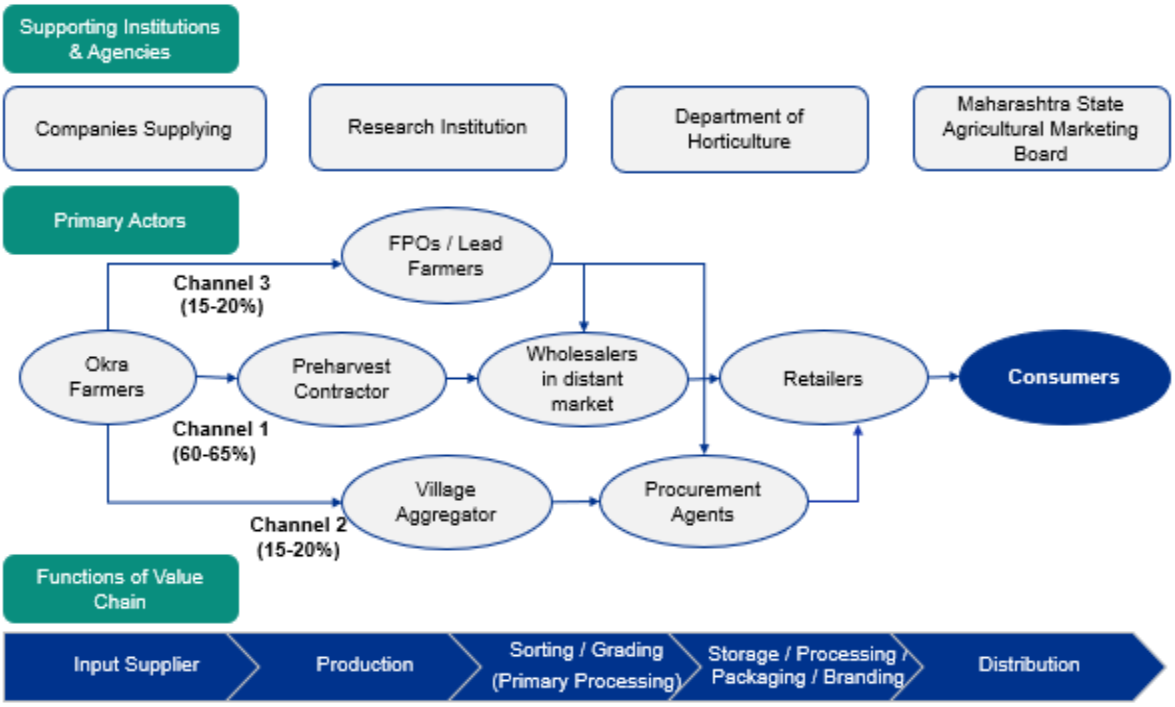
Figure 1: Structure of Okra Value Chain



Source: Primary Research

There are 3 primary marketing channels okra to reach consumers from farmers. The commodity flow through these marketing channels is detailed in the figure below.

Figure 2: Commodity Flow and Trade Analysis of Okra



Source: Primary Research

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 okra 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 Export Markets

Export markets are regions / countries that okra is exported or can be exported from India. Export markets for okra are classified as Indian Sub-continent, the Middle East, and Europe 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

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.

India currently exports okra to Nepal, Bhutan, Maldives, and Bangladesh. Nepal is one of the largest importers of okra from India. Exports to Maldives and Bangladesh are of insignificant quantity.

2.1.1.2 Competition

Within importing countries:

Bhutan, Bangladesh, and Nepal cultivate okra required for their domestic consumption. They import from India to plug domestic supply shortage as and when necessary.

Within India:

Almost all of okra exports from India to Nepal is from Uttar Pradesh and Bihar. Both the states are large producers of okra and have the advantage of proximity to Nepal for exports. Exports to Bhutan is catered by West Bengal, which is also a top okra producer in the country and borders both Bhutan and Bangladesh.

2.1.1.3 Maintaining Quality Standards and Supply

Exporting okra to Nepal does not require adherence to high quality standards. The focus is on exporting low cost okra due to high price sensitivity of the consumers in Nepal. Hence, Grade II & III okra is suitable for export to Nepal.

Bhutan imports medium-high quality okra from India. The country has strict regulation on MRLs for import of food products. It has banned import of few horticulture crops from India due to incidence of high MRLs. The MRL levels for pesticide residue in food are published by the Government of Bhutan and can be found in the following link - https://www.bafra.gov.bt/wp-content/uploads/2022/08/BMS-012017-PESTICIDE__RESIDUES_IN_FOOD.pdf

Supply to Nepal and Bhutan are done by road, through land ports in Uttar Pradesh and Bihar (Nepal), and West Bengal (Bhutan).

2.1.1.4 Pricing

The average export price to Nepal is ₹10-12 per kg and to Bhutan is ₹35-37 per kg in 2021-22. Due to these low export prices, exporting to Nepal and Bhutan may not be a lucrative option for Maharashtra FPOs. Both these countries share borders (geographical proximity) with top okra producers in the country. The logistics cost from these states to their respective export market (Nepal / Bhutan) would be significantly less than the logistics cost from Maharashtra.

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

The Middle East market has significant Indian diaspora and Indian origin population especially UAE, Qatar, Saudi Arabia, Oman, 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.

Middle East is the biggest importer of okra, with UAE as the top country-wise importer. Qatar and Kuwait are also major importers (>100 MT per year) of okra from India. Bahrain, Saudi Arabia, and Oman also import okra though in small quantities.

2.1.2.2 Competition

Other countries:

Okra is produced in good quantities across the Middle East countries for their domestic consumption and for exports primarily within the Middle East region. Iraq is the largest producer of okra in the Middle East region, while Saudi Arabia, Yemen, Oman, and Syria also produce good quantities of okra.

Apart from India, Pakistan and Egypt are other major exporters of okra to the Middle East.

Other states:

Major exporters of okra to the Middle East apart from Maharashtra are Kerala, Tamil Nadu, and Telangana. Though Kerela and Telangana are not major okra producers, okra is part of the basket of regular vegetables that is exported from Cochin and Hyderabad. Since, the quantity of okra exported less, leading okra exporters are those states that export regularly vegetables to the Middle East market.

2.1.2.3 Maintaining Quality Standards and Supply

Most target countries for export of okra in the Middle East are high income countries. Accordingly, only superior quality is preferred by the consumers in those markets.

Varieties	No preferred varieties
Colour	Dark Green – Green
Size	3 to 4 inches in length
Maturity	Okra should be tender and firm Soft okra indicated over maturity and are not acceptable

CODEX standards are universally acceptable standards for agriculture produce trade. The CODEX standard specified quality for okra is provided in the table below.

Minimum Requirement	Okra must be, • whole, with clean cut peduncle • fresh in appearance; sound, produce affected by rotting or deterioration such as to make it unfit for consumption is excluded • clean and practically free of any visible foreign matter

	• practically free of pests and damage caused by them affecting the general appearance of the produce • free of abnormal external moisture, excluding condensation following removal from cold storage • free of any foreign smell and/or taste • free from damage caused by low or high temperatures
Class	Extra Class – Superior quality and free of defects (surface defects less than 0.5% of surface area) (5% tolerance) Class I – Good quality, slight defect in shape, colour, skin allowed (surface defects less than 2% of surface area) (10% tolerance) Class II – Those that do not qualify for the above classes but quality minimum requirement (10% tolerance)
Size (Length)	Size 1: 2 to 4 cm Size 2: 4 to 6 cm Size 3: 6 to 8 cm Size 4: 8 to 10 cm Size 5: more than 10 cm
Packaging	Each package should be of a single class with same origin, variety, and quality. Packing material should be clean and new and should comply with Recommended International Code of Practice for Packaging and Transport of Fresh Fruits and Vegetables (CAC/RCP 44-1995, Amd. 1-2004)

Okra is exported only in small quantities by most of the exporters. Hence, exporters generally prefer to procure from traders, instead of farmers. Additionally, traders provide assured quality to exporters making it convenient for exports to procure from traders. Some large-scale exporters are establishing backward linkages for farm procurement of okra. FPOs can leverage this and supply to these exporters required quality and quantity to fetch premium prices.

FPOs can develop the following infrastructure to make their produce suitable for exports to Middle East markets – packhouse for sorting, grading, and packaging. FPOs can directly package as per requirement of the exporter and provide okra that are ready for export. The infrastructure can also be utilized to supply to premium domestic markets such as Organized Retail and eCommerce. Okra is exported only by air to the Middle East.

Okra is consumed both in fresh and frozen form in the Middle East. Cut, frozen okra can be exported to the Middle East that can provide margins better than export of fresh okra.

Packaging specifications for okra specified by APEDA are available on the following link - https://apeda.gov.in/apedawebsite/six_head_product/Brochure_07_Green_Chillies_Okra_Papadi_Brinjal_(Big).pdf

2.1.2.4 Pricing

The purchase price of okra by exporters is towards the higher end of the prevailing domestic market prices. Hence, FPOs can sell in the range of ₹40-50 per kg to exporters.

FPOs will incur labour costs for sorting, grading, and packaging in the range of ₹1-3 per kg, which are required for exports to middle east. For packaging, cost of 2.5-5 kg CFB boxes is around ₹5-10 per box.

Logistics cost to Mumbai airport is also to be accounted when deciding on pricing. For export by air, the port handling charges are approximately ₹3-5 per kg.

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

Europe is one of the biggest markets, along with North America, for export of agriculture commodities from developing countries. Most of the countries in this market are developed economies and have high quality standards for marketing of fresh fruits and vegetables. The purchasing power of consumers of in this market is significantly higher than other markets such as Middle East and Indian Sub-Continent.

Except UK, the presence of Indian diaspora is insignificant in other countries (only Italy and Germany have more than 1 lakh Non-Resident Indians (NRIs), while UK has more than 3.5 lakh NRIs and 14 lakh Persons of Indian Origin). Hence, unlike Middle East market, where the consumption of produce from Indian can be primarily dependent on immigrants from India and neighboring countries, the consumption in Europe should be driven by local population.

The general European cuisines do not have okra as an ingredient. Hence, the consumption of okra is driven by Indian diaspora, leading to limited demand from the Europe market. India’s okra exports to Europe in total was only around 1000 MT in 2021-22. UK and Germany are large importers of okra from India.

2.1.3.2 Competition

Other countries:

Within Europe, there are small production regions in Spain and Italy. Okra is exported from these regions to other countries within Europe. India competes with top African producers and exporters such as Kenya and Egypt in the Europe market. The okra market is small in Europe, and there is no domination of any particular country in exports of okra to Europe.

Other states:

Major exporters of okra to the Middle East are Maharashtra and Gujarat. Gujarat is the top producer of okra in the country, and exports okra with other vegetables regularly to European markets. Though Maharashtra produces only 1/7th – 1/8th of Gujarat's okra production, regular trade of fresh vegetables with European markets makes it the top exporter of okra.

2.1.3.3 Maintaining Quality Standards and Supply

Europe market has very high standards on quality of imports for food products. Across all exporting countries, only the top-grade fruits and vegetables are exported to European markets.

Varieties	No preferred varieties
Colour	Dark Green – Green
Size	3 to 4 inches in length
Maturity	Okra should be tender and firm Soft okra indicated over maturity and are not acceptable

CODEX standards are universally acceptable standards for agriculture produce trade. The CODEX standard specified quality for okra is provided in the table below.

Minimum Requirement	Okra must be, • whole, with clean cut peduncle • fresh in appearance; sound, produce affected by rotting or deterioration such as to make it unfit for consumption is excluded • clean and practically free of any visible foreign matter • practically free of pests and damage caused by them affecting the general appearance of the produce • free of abnormal external moisture, excluding condensation following removal from cold storage

	• free of any foreign smell and/or taste • free from damage caused by low or high temperatures
Class	Extra Class – Superior quality and free of defects (surface defects less than 0.5% of surface area) (5% tolerance) Class I – Good quality, slight defect in shape, colour, skin allowed (surface defects less than 2% of surface area) (10% tolerance) Class II – Those that do not qualify for the above classes but quality minimum requirement (10% tolerance)
Size (Length)	Size 1: 2 to 4 cm Size 2: 4 to 6 cm Size 3: 6 to 8 cm Size 4: 8 to 10 cm Size 5: more than 10 cm
Packaging	Each package should be of a single class with same origin, variety, and quality. Packing material should be clean and new and should comply with Recommended International Code of Practice for Packaging and Transport of Fresh Fruits and Vegetables (CAC/RCP 44-1995, Amd. 1-2004)

Supply of pest infested or diseased okra does not comply with the health and phytosanitary requirements of the European markets. Repeated supply of such okra shall also affect the general supply of okra from India, leading to temporary bans. Hence, significant care should be taken to export pest and disease-free, good quality okra that comply with MRLs to Europe markets. FPOs can adopt Integrated Pest Management practices among its member farmers to keep a check on residue limits.

MRL limits of Europe markets are considered to be the strictest across the world. MRLs adopted by Europe Union is updated regularly and can be found on https://food.ec.europa.eu/plants/pesticides/eu-pesticides-database_en. The MRLs indicate the “maximum” allowable levels for different chemicals, but it depends on the importers for more stricter requirements. Many large retailers in Europe can have more stricter standards on MRLs, which the exporter should clarify through the importers. Okra is not usually listed by large retailers as the market is small, and hence the retail channel for okra is through local Indian retailers.

Okra is exported only in small quantities by most of the exporters. Hence, exporters generally prefer to procure from traders, instead of farmers. Additionally, traders provide assured quality to exporters making it convenient for exports to procure from traders. Some large-scale exporters are establishing backward linkages for farm procurement of okra. FPOs can leverage this and supply to these exporters required quality and quantity to fetch premium prices.

FPOs can develop the following infrastructure to make their produce suitable for exports to Europe markets – packhouse for sorting, grading, and packaging. FPOs can directly package as per requirement of the exporter and provide okra that are ready for export. The infrastructure can also be utilized to supply to premium domestic markets such as Organized Retail and eCommerce. Okra is exported only by air to Europe.

APEDA has published a note on procedure for export of okra to Europe Union - https://apeda.gov.in/apedawebsite/Announcements/procedureokraeu.pdf. Packaging specifications for okra specified by APEDA are available on the following link - https://apeda.gov.in/apedawebsite/six_head_product/Brochure_07_Green_Chillies_Okra_Papadi_Brinjal_(Big).pdf

2.1.3.4 Pricing

The purchase price of okra by exporters is towards the higher end of the prevailing domestic market prices. Hence, FPOs can sell in the range of ₹40-50 per kg to exporters.

FPOs will incur labour costs for sorting, grading, and packaging in the range of ₹1-3 per kg, which are required for exports to middle east. For packaging, cost of 2.5-5 kg CFB boxes is around ₹5-10 per box.

Logistics cost to Mumbai airport is also to be accounted when deciding on pricing. For export by air, the port handling charges are approximately ₹3-5 per kg. The air freight to London and Amsterdam is in the range of ₹120-160 per kg.

2.1.4 Other Export Markets

Singapore is an important market for okra exports from India. The significant Indian diaspora in Singapore drives the demand for okra and other Indian vegetables that are exported on regularly from India. India faces competition from Malaysia in the Singapore market as Malaysia produces good quantities of okra.

Australia could be an important market for okra exports due to the high Indian diaspora in the country. India is yet to export full-fledged okra to Australia due to biosecurity concerns. The Australian Department of Agriculture, Water and the Environment is drafting the biosecurity import requirement for okra from India. The Department published the draft report in July 2022 (https://www.agriculture.gov.au/sites/default/files/documents/draft-report-biosecurity-import-requirements-okra-from-india.pdf) and is in the process of preparation of the final report. As per the draft report, fruit flies, mealy bugs, scale insects, thrips, and mites are the pest groups that would further risk assessment. Based on the final report, which shall be published post the risk assessments, India can export okra post compliance to the requirements of Australia. Exporters along the farmers and Government stakeholders

can comply with the requirements by setting up Standing Operating Procedures for export of okra to Australia.

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	Establishing 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 ○ 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

Export Route	Establishing Connects
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 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 ● 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 ● Countries can ban import of okra 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	● Exporting through this route is suitable for all FPOs, especially for FPOs that handle small quantities ● 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

Export Route	Risks / Disadvantages	Advantages
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 ● Countries can ban import of okra 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	● Higher margins ● Long-term business opportunity. FPO can become an exporter for other FPOs / market players ● Increased 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

Domestic markets consume all grades of okra, as it has a wide range of customer segment. The demand from domestic market is constant throughout the year, while the pricing is based on day-to-day supply demand dynamics.

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 translate to low prices in another region. Hence, FPOs can sell their produce across different domestic markets.

2.2.2 Competition

Due to low production in the state, Maharashtra is a net consumer of okra. Okra from Maharashtra is not usually sent to other states. Hence, competition for Maharashtra FPOs are those states that supply okra into the state. Okra mainly comes from Gujarat and Madhya Pradesh into Maharashtra. Both the states are top producers of okra in the country, cultivating 6-8 times more quantity than Maharashtra.

2.2.3 Maintaining Quality Standards and Supply

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

Grade	Size of okra	Colour of okra
Grade A	3-4 inch	Dark Green – Green
Grade B	4-7 inch	Green
Grade C	>7 inch	Green - Light

Currently, sorting and packaging of okra are done by traders and not farmers. These activities 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 clean, sort and package their produce. Okra is delivered to market either in plastic crates (12-13 kg per crate) or in large polythene packets (20 kg packs).

Grade-wise sales (sorted) of okra is not practices 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.

Pre-cooling and cold storage of okra is not generally practiced in the domestic markets. This is because there is consistent supply and demand year-round, and hence there is no storage of okra.

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 okra is not prevalent in all markets, as the activity is done by the commission agents or traders, and further supplied to different channels.

The table below provides an approximate price range for okra in major consumption markets in Maharashtra.

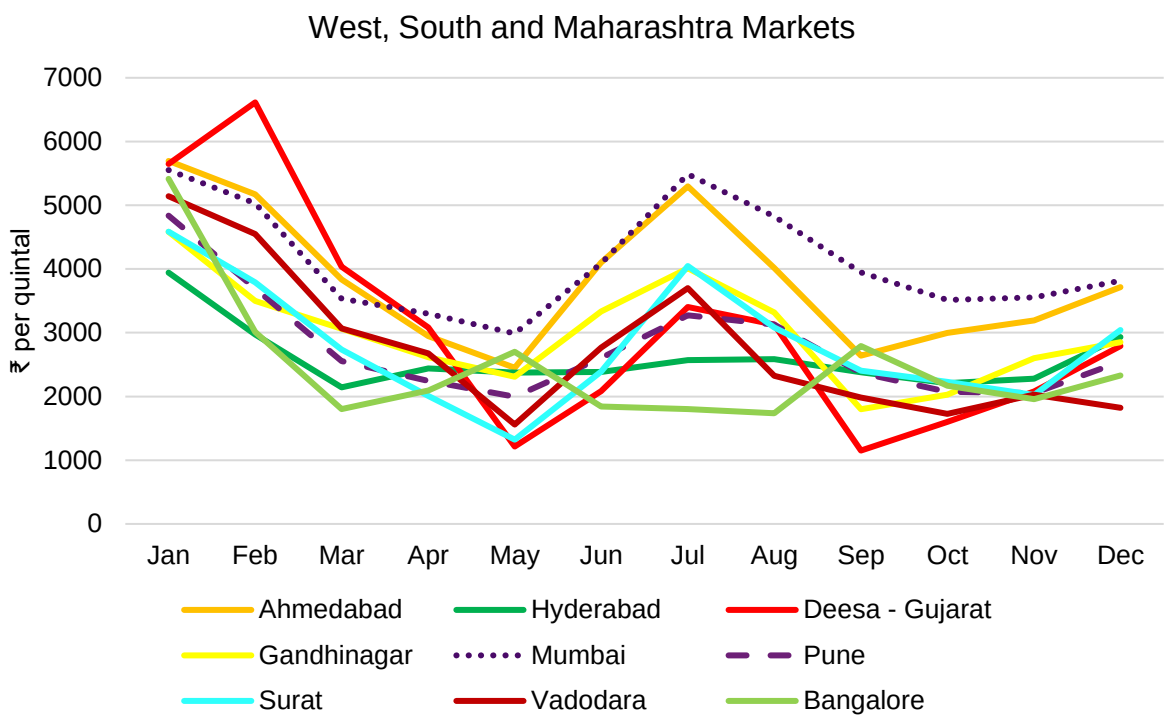
Grade	Price in Peak Season	Price in Lean Season
Grade A	₹25 to 30 per kg	₹30 to 35 per kg
Grade B	₹15 to 25 per kg	₹20 to 25 per kg
Grade C	₹6 to 15 per kg	₹10 to 15 per kg

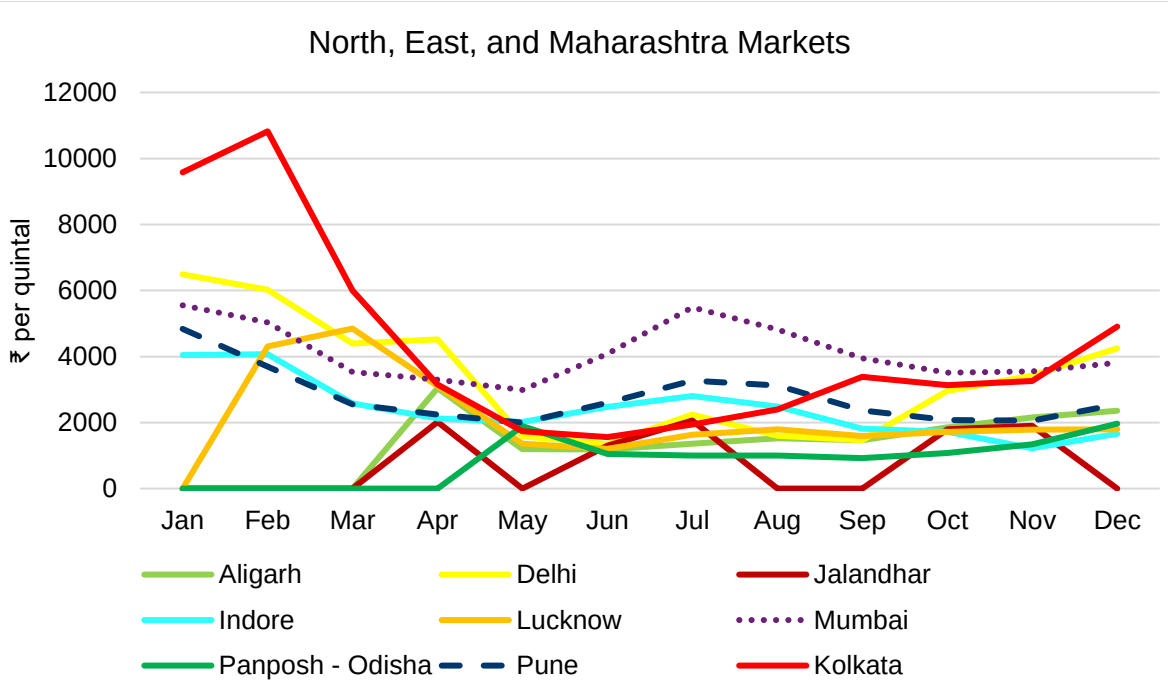
For supplying to other domestic markets in the country, it is necessary to understand the pricing trends during the concerned week in those markets. Supplying to markets outside the State might not always fetch better prices for the FPOs, especially since Maharashtra is a net consumer of okra. Costs related to transportation and loss of quality / weight during transportation should also be accounted.

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

The below chart provides modal price comparison between major okra markets in Maharashtra, and markets of major cities in India. Markets in major cities doesn't necessarily provide higher prices than the regional *Mandis*.

Table 16: Okra Modal Price in Major Okra Markets across India – 2022





Source: AGMARKNET

Domestic markets tend to be quality agnostic, hence do not usually pay premium for good quality produce. It also prefers all quality produce so that it can supply to its wide customer base. Selling in domestic markets

(through *Mandis*, traders) may not be the most profitable channels for the FPOs. FPOs that can sort and grade their produce, should have sell through other channels that require specific quality of okra. Nonetheless, domestic markets are an important channel as they have consistent demand.

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 okra in surrounding geography.

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

2.2.6 Advantages and Risks Associated

Selling to domestic markets (other than local *mandis*) decreases the price risk significantly. When prices are low in nearby markets, FPOs can sell their produce to other domestic markets wherever feasible. 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.

2.3.2 Competition

FPOs looking to supply to market players in this segment are competing with other FPOs located in okra producing regions within Maharashtra. Okra is not transported over long distance (from distant markets) to or from other markets, as it cultivated across the country. In addition, production in Maharashtra is limited. Hence, okra procured in Maharashtra is usually sold within the states, and not procured for supply to other states in the country.

Market players procure good quantities of okra from Gujarat for sales in Maharashtra. Gujarat is the largest producer of okra in the country and is in close proximity to the major cities (Mumbai, Pune) in Maharashtra.

2.3.3 Maintaining Quality Standards and Supply

Organized retail and eCommerce companies generally require high quality (Grade A and B) produce. Converse to many other horticulture crops, smaller sized vegetable is preferred in Okra.

Varietal Preferences	No varietal preferences
Colour	• Dark green to green • Light green is not preferred
Size	• Premium – 3-4 inch • Economy – 4-6 inch
Maturity	• Okra should be tender

	• Tip of okra should break on pressing – indicating ideal maturity • Over mature okra is not generally accepted
Criteria for rejection	Big size, broken, hard, too soft, big seeds / high number of seeds, dry, damaged, bent / curly, brown / black spots

FPOs should ensure that it delivers on the quality requirements of these market players consistently to build long-term business relationship. Okra is procured every day / alternate day by these market players for supply to their customers. Hence, FPOs should plan harvest timeline of its farmers to enable it to supply every day the required quantity.

These market players establish multi-crop collection centers across major vegetable growing regions in the State for everyday supply to cities. FPOs would be required to supply okra to the nearby collection centers.

FPOs can invest in packhouse facility for sorting, grading, and packaging of okra. Supply to these market players usually does not require washing of okra. Post sorting and grading, FPOs should also pack the okra in desired packaging by the market players – crates or CFB boxes. Market players might also require primary packaging (packs of 250 g to 1 kg) of okra in modified atmosphere packaging (perforated plastic bags).

Investing in pre-cooling facilities should be as per market demand. Pre-cooling maintains the freshness and quality of produce during long-distance transportation. Once okra is pre-cooled, 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 regional market prices. FPOs should be able to supply at the prevalent pricing in its region. Market players can also pay a premium of around 5% for consistent and quality supply.

FPOs will incur labour costs for sorting, grading, and packing in the range of ₹1-3 per kg, which are required for supply to this segment. Since these markets take regular supply from FPOs, crates can be used to supply for supply as it reduces packaging cost due to reusage.

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 Satara, Nashik, Thane, and Jalgaon 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 post-harvest infrastructure can get good value for their Grade A and B okra. This segment is growing rapidly, hence making good business relationship with market players 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 such as collection centers, which the FPOs can leverage. FPOs can enter into seasonal contracts with these companies and sell at profitable prices at reduced risk. Payment default risk is lower with these market players.

These companies function on credit terms, though credit terms for FPOs can be only 3 days to 15 days. Rejections and price cuts due to quality issues can be common occurrence as they can have strict quality norms. Since these companies procure from different okra production regions and numerous sellers, the pricing power with FPOs is low during negotiations.

2.4 HoReCa

Hotels, Restaurants and Cafes (HoReCa) segment is a minor consumer of okra. This segment also includes different types of eateries and corporate kitchens.

2.4.1 Characteristics of the Segment

HoReCa segment is a price sensitive market and less demanding on quality. The segment currently meets their vegetable needs from local *Mandis* or wholesalers. Due to low usage of okra in hotels or restaurants, this segment as a whole is not a major buyer of okra. The requirement of individual market player is minimal – a hotel or a restaurant would require only few kgs of okra per day.

2.4.2 Competition

For an FPO looking to supply to HoReCa segment its competitors are the local *Mandis* and wholesalers. The HoReCa segment also tend to have long-standing relationship with select suppliers, as the suppliers understand their day-to-day requirements.

2.4.3 Maintaining Quality Standards and Supply

Okra of medium-low grades are suitable for supply to most of HoReCa segment market players. The quality requirements acceptable by HoReCa customers is provided in the table below.

Varietal Preferences	No varietal preference
Colour	Green to Light green
Size	Longer okra (8-10) inches are also acceptable
Defects	Physical defects are acceptable

FPOs should target for supplying to this segment only if it does sorting and grading of their produce. Most market players in this segment are less quality conscious and hence can be supplied lower grade okra.

FPOs should target to supply to this segment with predictable quality and timeline. This segment should be targeted mainly for supply in small quantities and at regular intervals. Based on the FPOs' understanding of the proportion of lower grades it has after sorting, it can fix a certain number of market players in the HoReCa segment to supply. Supply to these market players should then be done throughout its season. Supply should also be ideally done in restricted geography due to low order quantity, and frequent deliveries.

2.4.4 Pricing

FPOs may not be able to charge premium pricing for their supply consistency and quality standards. The quality required by these market players are generally available in the local *Mandis*. Hence, it is necessary to maintain the prevailing market prices when supplying to these market players.

FPOs should also account in for the cost they would incur when delivering to these market players. Low quantities with frequent deliveries that is required by this segment can lead to high logistics cost.

2.4.5 Establishing Connects

Supplying to HoReCa segment can be done only in restricted geography, as the logistics cost should be as minimal as possible. Transportation of only low-grade produce required for this segment over long distance may not be economically feasible. Hence, the target should be the segment players in a radius of 10-15 kms around the FPOs' packhouse. Establishing connects with this market is either through mutual contacts or through directly approaching potential market players.

2.4.6 Advantages and Risks Associated

This segment also have consistent and predictable demand that can help the FPOs for easy planning and selling their lower grades. The risk of non-payments is minimized as the daily purchase volume per market player is low.

HoReCa segment is price conscious and hence FPOs cannot manage price risk by supplying to this segment.