

# TRAINING MANUAL FOR SOURCING MANAGERS







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India is an agrarian economy. Agriculture and allied activities are still the largest source of livelihoods for more than 70% of rural households in India. A major chunk of farm labour force are women. Interventions in the agriculture sector go a long way in realising the Sustainable Development Goals such as reducing poverty, unemployment, and gender inequality, thereby boosting economic growth. To this effect UNDP India focusses on value chain interventions – particularly post-harvest support, market linkages and improving capacity building of farmers through a local cadre of sourcing and business managers. With six years of extensive experience in value chain interventions across the country we have realised the transformative impact this has on women as they rise to become sourcing and business managers. They help strengthen Farmer Producer Organisations (FPO), cooperatives and village organisations to improve the overall farm value chain in the country.

This extensive experience has been consolidated into a comprehensive **Women Sourcing Managers Training Manual** to fill the managerial capacity gap at the grassroots, equipping women with skills on quality assaying, pricing, warehousing and commodity financing. The training manual aims to equip women with the skills of managing the supply chain for the large producer collectives and improves their institutional ability to negotiate and build market-based relationships with private sector agribusiness companies. The curriculum, content, and pedagogy focus on building skills, mindsets, and ownership among women to manage procurement centres.

We hope that the curriculum will be especially useful to all stakeholders in the ecosystem engaged in capacity building for collectives – especially in agribusiness supply chain. Availability of managerial capacity at local level will go a long way in empowering farmer collectives.

Moreover, women in leadership roles are certain to inspire millions of women farmers whose efforts go unnoticed in boosting India's growth story.

A handwritten signature in black ink that reads "Amit Kumar". The signature is written in a cursive, slightly stylized font.

**Mr. Amit Kumar**  
**Head, Inclusive Growth**  
**United Nations Development Programme**



## PARTNER STATEMENT



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Arya.ag, India's largest grain commerce platform, strives to serve farm value chain participants by offering them the choice of when to sell and whom to sell to. We strive to live up to Dr. Verghese Kurian's idea of bringing together and leveraging the wisdom of rural producers and the skill of professionals to create win-win solutions that can contribute to rural prosperity. Over the past decade, our near-farm tech-driven integrated business model has layered services touching the farmer at every step of the value chain, enabling trust, transparency, and value through every transaction. We have also had the privilege of working and learning from a host of prestigious development actors, honing our skills and toolset to improve value realization for communities.

With UNDP, we have learned that skilled professionals in rural areas can pivot this journey by supporting farmers and farmer-producer organizations in post-harvest operations, including managing procurement operations, efficient aggregation centers, and facilitating market linkages. Over the years and through our community interventions and learnings with UNDP, Arya.ag has developed a training curriculum to skill community resource persons, especially women and youth in rural areas, on various aspects of post-harvest value chain management.

The curriculum creates awareness among the community resource persons on the strengths of Farmer Producer Organizations and their role in the disintermediation of agri-value chains. It builds skills in specific aspects of the post-harvest value chain, including quality assaying, warehousing, market linkages, and commodity-based financing. We have structured the course content to ensure that participants get sufficient hands-on experience and exposure to various aspects of post-harvest value chain management.

We believe that this curriculum will be an essential tool for the ecosystem in training rural community value chain participants. This curriculum will contribute to strengthening the cadre of skilled rural youth and women who can assist Farmer Producer Organizations in becoming sustainable business enterprises and, in turn, improve agricultural households' incomes.

We are thankful to the UNDP team for providing the opportunity to develop the training module. We are grateful to Mr. Amit Kumar, Dr. Ravi Chandra, Ms. Divya Jain, Mr. Krishna Mohan Gupta, and Mr. Arjun Kaurav for their input which has strengthened the content and structure of this training curriculum.

**Mr. Prasanna Rao**  
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01

## INTRODUCTION



## CHAPTER SUMMARY



### OBJECTIVES

- To understand the role of community resource persons in development interventions
- To gain an overview on the roles and responsibilities of a Sourcing Manager
- To gain an overview on the broad themes covered in the training module

### TIME

90 Min

### REQUIRED MATERIALS



Projector and Screen, White Board, Markers, PPT Slides



## GUIDELINES FOR INSTRUCTORS

S.N	TRAINING CONTENT	INSTRUCTOR ACTION	MATERIAL	TIME
1.	Introduction of participants	Ask all participants to introduce themselves	-	20 mins
2.	CRPs and their role in Development interventions	<p>1. Play the video on Krushi Sakhis</p> <p>2. Ask the participants to identify different community resource persons in their village and the roles that they play in their village. List down them on the white board. (Activity 1)</p> <p>3. Discuss the definition of CRPs, their roles and the different domains where they contribute in the villages as laid out in Section 3.1</p>	Projector and Screen, White Board, Markers, PPT Slides	30 mins
3.	Role of Sourcing Managers	<p>1. Play the 4.5 minutes of the video on Ram Rahim FPC to give participants and overview on FPOs. Ask the participants on how community cadre can contribute in such interventions (Activity 2)</p> <p>2. Explain to the participants that they will work as community resource persons for FPOs. Discuss the key roles</p>	White Board, Markers, PPT Slides	20 mins
4.	Curriculum for training and session plan	<p>1. Ask the participants what all aspects they should know to carry out their roles effectively</p> <p>2. Share the key themes in the curriculum as well as the session plan with the participants</p>	White Board, Markers, PPT Slides	20 mins



## TRAINING CONTENT

### 3.1 Community resource persons and their role in Development Interventions

Community resource persons are members from community who are trained on specific skill sets which are required to support the development intervention. They form the core of a decentralized community extension system supporting and driving the development intervention. The key roles of CRPs in development interventions are given below.

- Gain sufficient knowledge on the operational and administrative aspects of the development intervention.
- Ensure last mile connectivity through organizing and training other members of the community
- Play a direct role in implementation of the development intervention as well as extend support to community members during the implementation.
- Maintaining documentation and records related to the development interventions

Community resource persons play the pivotal role in assisting village communities to be agents and owners of their own developmental process. The idea of CRPs has been successfully practiced over the last few years in different states and in different contexts. Some of the examples where CRPs have played a key role in developmental interventions are given below

**1. ASHA Workers** - ASHA workers form the backbone of National Rural Health Mission in the country. They are trained female community health activist who are selected from the village itself and hence accountable to the village community. They work as an interface between the community and the public health system. ASHA workers create awareness on health and its social determinants and mobilise the community towards local health planning and increased utilisation and accountability of the existing health services.

**2. Anganwadi Workers** - Anganwadi workers are the focal point through which Integrated Child Development Services are delivered to children and mothers in the country. Anganwadi workers reach to variety of beneficiary groups, provide them with different services which include nutrition and health education, Non- Formal Pre School Education (NEPSE), Supplementary nutrition, growth monitoring and promotion, and family welfare services. She also co-ordinates in arranging immunization camps, health checkup camps.

**3. Community resource persons of NRLM** - National Rural Livelihoods Mission developed a cadre of CRPs trained in skills like bookkeeping, social and group management, business management, and financial literacy. These community resources persons (CRPs) then mobilize and train other SHG members. These CRPs with their dedication and hard work have been instrumental in scaling the SHG movement in the country.

**4. Pashu Sakhis** - Pashu Sakhi is a Community Animal care Service Provider (CASP) who enables the last mile coverage in rural areas where clinical services for livestock is not available on time or expensive to afford for rural poor. Pashu Sakhis create awareness and capacity building of the community on livestock-based livelihoods activities and facilitates aggregation and marketing of the livestock products.

**5. Krushi Sakhis** - Krushi Sakhis support the implementation of Mahila Kisan Sashakthikaran Pariyojana (MKSP). They provide training on sustainable agro-ecological practices to women farmers in their villages. They also organize farmer field schools and provide extension support to women farmers. They may also operate and manage NPM shops, seed banks, Custom hiring centres etc.

**6. Aagewans of SEWA** - Self Employed Women's Association, relies on local grassroots leaders and volunteers to help identify and drive SEWA's efforts. SEWA's volunteers (SEWA saathis) first mobilize their local communities for regular community meetings called Mohalla Meetings. During these meetings, community leaders (Aagewans) spread awareness of SEWA's resources and missions as well as collect and answer any difficulties or questions that members of the community face. Through these regular organizing and capacity building with the support of Aagewans, SEWA institutions, such as cooperatives, banks, self-help groups, producers' companies and collectives are formed and operated by its women members.

### 3.2 Role of Sourcing Managers in building Producer organizations

FPOs are an important institutional mechanism to organise small and marginal farmers. Small & marginal farmers face challenges due to their small scale of operations and can't engage or compete with other value chain actors from a position of power. Collectivization of farmers through FPOs can help in overcoming these challenges associated with small scale farming. FPOs will allow members to negotiate as a group and can help small farmers in engaging with other value chain actors. Skilled human resources for managing the business operations are a necessary condition for FPOs to be successful.

In this context, Sourcing managers are envisaged to be community resource persons who will support farmer producer organizations/farmer's groups to forge better market linkages, bridge the gap between what was being produced and what was in demand and to thus realize better value for their products from the market. The key responsibilities of sourcing managers are detailed below.

**1. Mobilizing farmers** - Sourcing managers ensure last mile connectivity between farmers and FPCs. Sourcing Managers play a key role in organizing farmers and building awareness among them on the role FPOs can play in making agriculture remunerative for them in the long run. They have to convince farmers to actively utilize various services offered by FPOs including input provision and procurement of produce.

**2. Coordinating between farmers and FPOs** - Sourcing managers should ensure that all the decisions of the FPO are communicated to the farmers and clear any doubts that farmers may have regarding the same. They should also coordinate between the farmers and the FPC management to ensure seamless service delivery, whether it is procurement of produce or provision of inputs. For example, in case of input provision, the sourcing managers should interact with farmers, understand their demand for inputs and communicate the same with the FPC management to ensure timely delivery of inputs to the farmers.

**3. Capacity building of farmers on post-harvest management** - Sourcing managers should build awareness among the farmers on post-harvest management practices including cleaning, drying, sorting, grading and proper storage of agricultural.

**4. Extending marketing education to farmers** - Sourcing manager should also contribute towards building awareness of farmers on various aspects of marketing of produce including quality parameters, quality testing and price information.

**5. Manage procurement centre operations** - Sourcing managers should handle collection point activities like including procurement planning, grading, sorting, weighing, storing, loading, unloading, invoicing, etc. They should also manage inventory at the collection centre and related documentation.

**6. Building business linkages with buyers of agricultural produce** - Sourcing managers will directly interact with buyers of agricultural produce. It is important for them to invest time and energy to build relationships with buyers. They should be able to listen to buyers patiently and understand their expectations very clearly and communicate the same with the farmers. They should treat all buyers as top priority and deliver the best experience to the buyers in all aspects. They should also maintain communication with the buyers with a clear focus on building long term relationships.

### 3.3 The need for Curriculum for Skilling Sourcing Managers

1. Lack of capacity in FPOs to manage procurement

2. Need of community resource persons to aggregate farm produce and understand quality assaying
3. Ease of business with private sector
4. Enhance Trust of private sector in FPO ability to supply the required quantity and quality in timely manner
5. Women empowerment

### 3.4 Key Objectives of Curriculum for Skilling Sourcing Managers

The curriculum aims to build the capabilities of local resources with focus on three broad themes.

**1. Role of FPOs in making agriculture remunerative by integrating farmers into value chains** - Small and marginal farmers account for 86% of total farmers and contributes to 47% of total cropping area. Small scale farming characterised by the fragmented nature of holdings and limited production quantity is partly responsible for the lack of access to resources, processing/storage facilities, modern technologies and limited bargaining power in market for these small holders who are mainstay of Indian Agriculture. In this context, collectivization of small holders through FPOs can help them in achieving economy of scale and improve their access to resources and control over the overall value chain, in turn making agriculture more financially viable for them. It is important for the Sourcing Managers to internalize the significance of FPOs so that they in turn can motivate farmers to actively engage with the FPOs.

**2. Managing procurement centres** - Sourcing managers should have an exhaustive knowledge on various aspects of running procurement centres such as legal aspects, quality assaying, fair pricing, and warehousing. In addition to this, they should develop a basic understanding of planning and managing finances of procurement

**3. Leadership and Soft-skills** - Sourcing managers should develop soft skills and leadership skills for managing relationships with different stakeholders including farmers and market players. They should have good communication skills, problem solving skills, and interpersonal skills.

**4. Improving price realization through Commodity backed financing and Commodity exchanges** - Farmers/FPOs can access post-harvest credit by accessing instruments for Commodity backed financing and this will enable them to sell their produce deliberately over time, leading to better price realizations. Commodity exchanges, which are regulated market platforms where commodities and derivatives are traded, can provide FPOs with access to a pan-India market and also make price discovery more transparent for farmers and small holder farmers. Sourcing managers should have a basic grasp of these concepts so that they can utilize these mechanisms to improve price realization and profitability for farmers/FPOs.

## ACTIVITIES

1. Watch the video on Krushi Sakhis and answer the following questions <https://www.youtube.com/watch?v=3KLdIUahmHM>

1.1 Do you know of other similar community cadre working in your villages? What role do they play in the village?

1.2 Do you think that they play an important role in their area of operations? Explain.

2. Watch the video on Ram Rahim FPC and answer the following questions - <https://www.youtube.com/watch?v=XbOvhGALk-I>

2.1 What could be possible role of community cadre in FPC interventions?

2.2 What are the knowledge and skill requirements for community cadre in FPC interventions?

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02

## STATE OF AGRICULTURE AND NEED FOR COLLECTIVE ACTION



## CHAPTER SUMMARY



### OBJECTIVES

- To understand the significance of Agriculture in India
- To understand the various problems faced by farmers in India
- To understand how collective action can address some of the problems faced by farmers.

### TIME



### REQUIRED MATERIALS



Projector and Screen, White Board, Markers, PPT Slides



## GUIDELINES FOR INSTRUCTORS

S.N	TRAINING CONTENT	INSTRUCTOR ACTION	MATERIAL	TIME
1.	Role of Agriculture in Indian Economy	<p>1. Ask the participants to list down the reasons for which agriculture is relevant to their villages (Activity 1). Note down the key reasons identified by them on the white board.</p> <p>2. Ask the participants to note down the share of various sectors in their total household income (Activity 2). Count the number of participants for whom share of agriculture and agriculture labour in household income belong to the following categories 0-25%, 25%-50%, 50%-75%, and 75% - 100%. Based on this categorization show how agriculture is important activity at both the household level and block/district level.</p> <p>3. Discuss the content provided in Section 3.1 by connecting it to the points shared by participants</p>	White board, Markers, PPT slides	45 mins
2.	Problems faced by Farmers	<p>1. Ask the participants to list down the key issues faced by farmers in their villages (Activity 3). List down the identified issues on the white board.</p> <p>2. Discuss the content provided in Section 3.2 by connecting it to the points shared by the participants in Activity 3.</p>	White board, Markers, PPT Slides	25 mins
3.	Problems faced by women farmers	<p>1. Ask the participants to identify role of women in various activities related to agriculture (Activity 4). Hold a discussion on whether and how women can take up the roles which are currently not taken up by them, especially market facing roles.</p>	White board, Markers, PPT Slides	25 mins

2. Show the video on Lijjat Papad as an example of how women have built business enterprises.
3. Ask women participants from agrarian households to list the challenges they face as farmers. Discuss the challenges explained in Section 3.2.1

<p>4. Collective Action</p>	<ol style="list-style-type: none"> <li>1. Explain the definition of collective action as laid out in Section 3.3 with help of example given in the section.</li> <li>2. Ask participants to share examples of collective action that they have seen in their villages (Activity 6). In the examples that are shared, ask them to identify the group of individuals, their shared problem, and the common action.</li> </ol>	<p>White board, Markers, PPT slides</p>	<p>25 mins</p>
<p>5. How Collective Action can address farmers' issues</p>	<ol style="list-style-type: none"> <li>1. Ask the participants to identify how collective action by farmers can solve issues that they have identified in Activity 3. On the whiteboard, list down the issues and collective action identified by farmers</li> <li>2. Play the Amul Manthan Song. Ask the participants if milk cooperative is an example collective action, and what all problems are solved by the milk cooperative in their villages. Nudge them to think about a scenario where milk cooperatives are not functional in their village.</li> <li>3. Discuss the content given in Section 3.4 by connecting it to the collective action identified by the participants</li> </ol>	<p>White board, Markers, PPT slides</p>	<p>25 mins</p>



## TRAINING CONTENT

### 3.1 Role of Agriculture in Indian Economy

Agriculture is pivotal to Indian economy for the following reasons.

#### Food Security

Agriculture is the only source of food supply to 130 cr. population of our country. Since independence, farmers with their hard work have ensured that India becomes a food surplus country from a food deficit. The annual per capita availability of food grains has increased from 144 kgs in 1951 to 180 kgs in 2019. Similarly, milk availability per capita per annum has increased from 47 litres per annum in 1951 to 143 litres<sup>1</sup>. This means that production has increased at a faster rate than increase in population. India is today the world's largest producer of milk, pulses, mangoes, and spices and is the second largest producer of rice, wheat, cotton, sugarcane.

#### Source of Employment & Livelihood






Agriculture sector engaged 43% of the working population in India in 2019<sup>2</sup>. While the share of workers engaged in agriculture has been decreasing gradually, it is still a major source of livelihood in rural India, where about 39.56% of the male workers and 54.69 % of female workers were engaged in agriculture in 2019<sup>3</sup>. Table below shows the percentage of working population engaged in agriculture in different countries for comparison.

<sup>1</sup> Estimated based on production data published in Economic Survey, 2021-22

<sup>2</sup> <https://www.statista.com/statistics/271320/distribution-of-the-workforce-across-economic-sectors-in-india>

<sup>3</sup> <https://data.worldbank.org/indicator/SL.AGR.EMPL.MA.ZS?locations=IN>

Table 2.1 Share of agriculture in total employment

COUNTRY	SHARE OF AGRICULTURE IN TOTAL EMPLOYMENT <sup>4</sup>
 United States	1%
 China	25%
 Brazil	9%
 Pakistan	39%
 Nepal	64%

### Provider of Inputs for Industries

Agriculture in India is the major source of supply of raw materials to various food processing industries such as Sugar mills, dairy plants, oil extraction units etc and textile and apparel industries. These industries together account for 20% of the total output of manufacturing sector in India.

### Market for Industrial goods

Agriculture also provides a market for industrial products such as tractors, agricultural implements, fertilizers etc. An increase in the level of agricultural income also has a positive impact on the bottom lines of big corporations selling a variety of products such as FMCG, two-wheelers etc.

### Role in Commerce

Agricultural products play a key role both in the internal and external trade of the country. The total value of export of agriculture and allied products in 2020-21 from India stood at Rs. 3.05 lakh crores<sup>5</sup>. Cereals, Cotton, sugar, coffee, spices, tobacco, meat and sea food are some of the key products exported from India. Thus, agriculture helps India to foot its import bill by earning precious foreign exchange.

## 3.2 Problems faced by Farmers

Even though agriculture plays a central role in Indian economy, farmers are in distress. Some of the key constraints faced by farmers and the consequences of those constraints are listed below.



Fig 2.1. Key Problems faced by farmers

<sup>4</sup> <https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS?locations=IN>

<sup>5</sup> <https://pib.gov.in/Pressreleaseshare.aspx?PRID=1725891>

Table 2.2 Key constraints faced by farmers

KEY CONSTRAINTS & PROBLEMS	CONSEQUENCES
<b>Smaller land holding size and further fragmentation</b>	Limits total production and lowers return on time invested in agriculture. Also limits capacity to fix price for the produce and negotiate with buyers due to low scale of production.
<b>Natural calamities like as droughts, floods, cyclones, pest and disease outbreaks which is further aggravated by climate change.</b>	Loss of investment in short term and erosion of natural resources in the long term.
<b>Lack of access to timely and adequate investment credit from institutional sources</b>	Farmers are forced to resort to informal sources of credit which comes at a high cost which in turn leads to indebtedness and distress sale of produce
<b>High dependence on external resources from seeds, fertilizers and machinery</b>	Higher cost associated with external resources reduces profitability
<b>Constantly increasing input prices and stagnating output prices combined with increasing cost of living in the form of cost of health, education and other necessities.</b>	Negative impact on profit, forcing farmers to desert farming, migrate and take-up low skilled and low waged jobs in towns/cities
<b>Unorganised, kept out of institutional framework</b>	Unable to gain scale and bargain, subjected to exploitation by intermediaries
<b>Lack of awareness about the entire ecosystem of farming including markets operating around farming, new technologies, entitlements and services from Government and the like.</b>	Suppresses agricultural productivity and profits. Farming remains at the level of subsistence and unable to graduate to an enterprise which grows consistently.

### 3.2.1 Problems faced by Women in farming

Women farmers are the backbone of agricultural workforce but their hard work has mostly been unpaid. While women farmers do the most tedious and back-breaking tasks in agriculture and animal husbandry they face many gender-specific obstacles as given below.

- 1. Lack of access to land** - Even though women comprise more than 42 percent of the labour force in agriculture, they own less than 2% of the agricultural land<sup>6</sup>. This lack of access to land has led to women not being identified as farmers in the country.

<sup>6</sup> [https://www.ncaer.org/news\\_details.php?nID=252&nID=252](https://www.ncaer.org/news_details.php?nID=252&nID=252)

**2. Lack of access to agricultural training and education** - Women in general doesn't get access to agricultural training and education and this in turn affects the productivity of the farms.

**3. Lack of access to agricultural markets** - Even though women are involve involved in most of work during the production phase as well as the harvest phase, their role is reduced to nothing during the marketing phase. Men in farming households usually have full control over marketing related decisions in agriculture.

**4. Lack of access to financing** - Lack of ownership of land prevents women from accessing finance and making necessary investments for making farms more productive.

**5. Wage gap for the same work** - Women earn almost 20% less<sup>7</sup> than what men earn for the same work in agriculture.

### 3.3 Collective Action

#### What is Collective Action?

Collective action involves a group of people who face a common problem, voluntarily engage in common action to pursue and achieve a common goal. For example, in case of Women SHG groups, a group of women come together voluntarily, form a group, and start small saving and internal lending to address unavailability of credit.




Fig 2.2. Collective Action


<sup>7</sup> Gender Wage Gap in The Agricultural Labor Market of India: An Empirical Analysis KUNDU, AMIT and DAS, SANGITA Department of Economics, Jadavpur University, Kolkata, India

### 3.4 How can Collective action address problems of farmers?

The most common form of collectivization that Indian farmers have adopted so far are Cooperative Societies, Federations of Self-Help Group, Joint Liability Groups, Farmer Clubs, Common Interest Groups. While collective action is not a silver bullet to solve all the issues listed in section 3.2, it can play a major role in addressing some of the key issues listed in the previous section. The same is explained below.

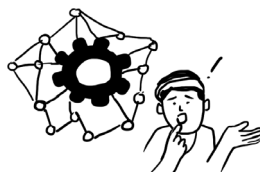
Table 2.3 Collective action to address agrarian issues

<b>PROBLEM 1</b>	
<p><b>Constantly increasing input prices and stagnating output prices combined with increasing cost of living in the form of cost of health, education and other necessities.</b></p> 	
<b>COMMON ACTION</b>	<b>SHARED GOAL</b>
Farmers coming together in a group and buying inputs in bulk at whole sale prices	Reduce cost of cultivation and increase profitability
Farmers aggregating their produce and selling directly to bigger traders/processors	Better price realization for produce and increased profitability
Farmers aggregating their produce, processing it on their own, and selling it wholesalers/retailer	Better price realization for produce and increased profitability

<b>PROBLEM 2</b>	
<p><b>Lack of access to timely and adequate investment credit from institutional sources</b></p> 	
<b>COMMON ACTION</b>	<b>SHARED GOAL</b>
Farmers come together and register a cooperative/FPO and FPO accesses loan against stock purchased from farmers	Enhanced access to post-harvest credit and reduce distress sale
Farmers come together and register a cooperative/FPO and cooperative/FPO purchases input in bulk on credit from fertilizer	Inputs available on credit at cheaper interest rates

**PROBLEM 3**

**Unorganised, kept out of institutional framework**



**COMMON ACTION**

Farmers come together, pool share capital, and register a company

**SHARED GOAL**

Engage with players in formal economy such agri-businesses, banks, warehouses etc.

**PROBLEM 2**

**Lack of awareness about the entire ecosystem of farming including markets operating around farming, new technologies, entitlements and services from Government and the like.**



**COMMON ACTION**

Farmers come together and register a cooperative/FPO and cooperative/FPO Manager coordinates with Agri Universities and arrange training session for farmers

**SHARED GOAL**

Stay updated on new technologies and adopt them for farming.

FPO Manager coordinates with Govt. and non-governmental agencies

Easy access of funds and other support services by the government / donors / service providers

## ACTIVITIES

1. List down the reasons why agriculture is significant in your village.
2. For your household, list down the proportion of total household income from various activities in the table below. For example, 50% of monthly income comes from Agriculture,30% for allied activities and 20% from Agricultural labour.

**SOURCE OF INCOME**

**SHARE IN TOTAL INCOME**

<b>Agriculture</b>	-----
<b>Agricultural labour</b>	-----
<b>Allied activity (rearing of Cattle, goat, sheep)</b>	-----
<b>Small Business</b>	-----
<b>Job/Profession</b>	-----
<b>Others</b>	-----



3. List down the key problems faced by farmers in your area and rank them based on their severity.

DOMAIN	ISSUE/PROBLEM FACED BY FARMERS	RANK (10 – FOR VERY CRITICAL, 1 – FOR MINOR ISSUE)
<b>Input</b>	-----	-----
	-----	-----
<b>Production</b>	-----	-----
	-----	-----
<b>Finance</b>	-----	-----
	-----	-----
<b>Marketing</b>	-----	-----
	-----	-----

4. In your household or village, among the following activities related to agriculture, which all performed by women? Write down Yes/No against each activity. Can women perform the activities which are currently not performed by them?

ACTIVITY	ARE WOMEN IN YOUR HOUSEHOLD PERFORMING THIS ACTIVITY CURRENTLY? (YES/NO)	CAN WOMEN PERFORM THIS ACTIVITY? (YES/NO)
<b>Purchasing of inputs</b>		
<b>Availing finance for production</b>		
<b>Land Preparation</b>		
<b>Sowing</b>		
<b>Weeding</b>		
<b>Harvesting</b>		
<b>Cleaning/drying/grading</b>		
<b>Finding Buyers</b>		
<b>Negotiating with buyers</b>		
<b>Selling to buyers</b>		

5. Watch the video on Lijjat Papad - <https://www.youtube.com/watch?v=QXMA4Djru7U>
6. List one example of collective action that you have seen in your village. Mention the group of individuals involved, what was the common action, and what was the shared interest.
7. Watch the Amul Manthan Song (<https://www.youtube.com/watch?v=onhgE0-z1qM>). Is milk cooperative is a collective action, and what all problems are solved by the milk cooperative in your villages?
8. For the problems that you have listed in Activity 2, can collective action by farmers offer a solution? If yes, mention the common action to be taken up and the goal that will be achieved through the action.

## REFERENCES

Farmer Producer Organizations – The Future of Small and Marginal Farmers, Published by GIZ.

The invisible gendered problem in Agriculture, Published by Dr. Reddy's Foundation

03

## INTRODUCTION TO FARMER PRODUCER ORGANIZATIONS



## CHAPTER SUMMARY



### OBJECTIVES

- To understand the concept of Farmer Producer organizations and the various legal forms of FPOs
- To understand the structure of FPOs, their governance and management, and various stakeholders of FPOs
- To get an overview of the various activities that can be undertaken by FPOs.
- To get an overview of the various government schemes for FPOs.

### TIME

3 hrs

### REQUIRED MATERIALS



- Projector and Screen, White Board, Markers, PPT Slides
- Downloaded videos of Interview with RS Sodhi and Amul's Story



## GUIDELINES FOR INSTRUCTORS

S.N	TRAINING CONTENT	INSTRUCTOR ACTION	MATERIAL	TIME
1.	Introduction to Farmer Producer Organizations	<ol style="list-style-type: none"> <li>1. Play the Amul India Story Video</li> <li>2. Play first 4 minutes of interview with RS Sodhi, MD Amul</li> <li>3. Ask the participants to answer the questions listed in Activity 1. Ask a few participants to share their answers.</li> <li>4. Discuss the concepts outlined in section 3.1 by connecting it to the responses of the participants.</li> </ol>	Downloaded Videos, Projector and Screen	45 mins
2.	Guiding Principles for FPOs	<ol style="list-style-type: none"> <li>1. Ask the participants to read the Case Study on Amul</li> <li>2. Explain the guiding principles of FPOs as given in section 3.2</li> <li>3. Ask the participants explain how AMUL adheres to these principles based on the case study.</li> </ol>	White board, Markers, PPT slides	30 mins
3.	Structure of FPOs	<ol style="list-style-type: none"> <li>1. Ask the participants to explain the structure of Amul and the roles played by cooperatives at village, district, and state level.</li> <li>2. Discuss with the participants the structure of a FPO engaged in agriculture using</li> </ol>	White board, Markers, PPT slides	30 mins

4. Governance and Management of FPOs	<ol style="list-style-type: none"> <li>1. Explain the role of BOD, Management, and members in Governance as given in Section 3.4</li> <li>2. Ask the participants to explain how Governance of Amul is carried out.</li> </ol>	White board, Markers, PPT slides	20 mins
5. Stakeholders of FPC	<ol style="list-style-type: none"> <li>1. Explain the various stakeholders of FPC as given in Section 3.5</li> <li>2. Ask the participants to identify the internal stakeholders, external stakeholders and partners of Amul</li> </ol>	White board, Markers, PPT slides	15 mins
6. Activities that can be undertaken by FPCs	<ol style="list-style-type: none"> <li>1. Ask the participants to identify various activities carried out by AMUL including services offered to members.</li> <li>2. Ask the participants to identify various activities that FPO can carry out for its members. Discuss</li> </ol>	White board, Markers, PPT slides	20 mins
7. Government Schemes for FPOs	Explain the various government schemes as laid out in Section 3.7	White board, Markers, PPT slides	20 mins



## TRAINING CONTENT

### 3.1 Introduction to Farmer Producer Organizations

A farmer producer organization (FPO) is a legal entity formed by farmers with the primary objective of serving the interests of farmers. While farmers have sufficient expertise in production stage of agricultural value chain, they usually don't have the expertise nor the scale for taking up other functions in the value chain like processing and marketing. FPO will bridge this gap by acting on behalf of the farmers by taking up other activities in the agri-value chain.

#### Essential Features of FPOs

1. It is registered body and legal entity .
2. Farmers are the shareholders in the organization. In other word, farmers are the owners of an FPO.
3. It is an economic entity, which will engage with markets on behalf of farmers with the objective of being profitable and financially viable and at the same time maximize returns for the farmers.
4. Organization deals with business activities and support services related to agricultural crops cultivated by the member farmers.
5. It works for the benefit of the member farmers.
6. It is an organization of the farmers, by the farmers and for the farmers.

## Legal Forms of Producer Organizations

Producer Organisation can be registered under any of the following legal provisions -

- Cooperative Societies Act/ Autonomous or Mutually Aided Cooperative Societies Act of the respective State
- Multi-State Cooperative Society Act, 2002
- Producer Company under Section 581(C) of Indian Companies Act, 1956, as amended in 2013
- Section 25 Company of Indian Companies Act, 1956, as amended as Section 8 in 2013
- Societies registered under Society Registration Act, 1860
- Public Trusts registered under Indian Trusts Act, 1882

Section 25 Company, Societies and public trusts are usually promoted non-profit purposes and hence are not suitable legal forms for FPO which is primarily a profit making business entity.

### Key differences between FPCs and Cooperatives

**Farmer producer companies and Cooperatives are two of the widely used legal forms for producer organizations. The table below lists the key features of cooperatives and Producer Companies**

Table 3.1 Key differences between Cooperative Societies and Producer Companies

PARAMETER	COOPERATIVE SOCIETY	PRODUCER COMPANY
<b>Membership</b>	Individuals and cooperatives	Any individual, group, association, producer of goods or services
<b>Share</b>	Non-tradable	Not tradable but transferable; limited to members at par value
<b>Profit Sharing</b>	Limited dividends on shares	Commensurate with volume of Business
<b>Voting Rights</b>	One member, one vote, but Government and Registrar of Cooperatives hold veto power	One member, one vote. Members not having transactions with the company may be prevented from voting. vote
<b>Government control</b>	Highly patronized to the extent of interference	Minimal, limited to statutory Requirements
<b>Extent of Autonomy</b>	Limited in “real world scenario”	Fully autonomous, self-ruled within the provisions of Act
<b>Reserves</b>	Created if there are profits	Mandatory to create every year
<b>Borrowing power</b>	Restricted as per bye-law. Any amendment to bye-law needs to be approved by the Registrar and time consuming.	Borrowing limit fixed by Special Resolution in general meeting. Companies have more freedom to raise borrowing power.

## 3.2 Guiding Principles for FPOs

Farmer producer organizations are guided by the cooperative principles explained in the following sections.

### **Voluntary and Open Membership**

FPOs are voluntary organisations, open to all persons able to use their services and willing to accept the responsibilities of membership, without gender, social, racial, political or religious discrimination.

### **Democratic Member Control**

FPOs are democratic organisations controlled by their members, who actively participate in setting their policies and making decisions. Men and women serving as elected representatives are accountable to the membership. In primary FPOs members have equal voting rights (one member, one vote) and cooperatives at other levels are also organised in a democratic manner.

### **Member Economic Participation**

Members contribute equitably to, and democratically control, the capital of their cooperative. At least part of that capital is usually the common property of the cooperative.

### **Autonomy and Independence**

FPOs are autonomous, self-help organisations controlled by their members. If they enter into agreements with other organisations, or raise capital from external sources, they do so on terms that ensure democratic control by their members and maintain their cooperative autonomy.

### **Education, Training, and Information**

FPOs provide education and training for their members, elected representatives, managers, and employees so they can contribute effectively to the development of their organizations.

### **Cooperation among Farmer Producer Organizations**

Farmer producer organizations serve their members most effectively and strengthen the cooperative movement by working together through local, national, regional and international structures.

### **Concern for Community**

FPOs work for the sustainable development of their communities through policies approved by their members.

In addition to adhering to the above cooperative principles, successful farmer producer organizations should strive to maximize their socio-economic significance in their domain. In order to achieve the same, the farmer producer organizations must focus on enhancing the member centrality, domain centrality, and patronage centrality. These terms are defined below.

### **Member Centrality**

Member centrality denotes the significance of the farmer producer organization to the livelihoods of their members. The FPO's purpose and the services offered to the members should play a major role in improving the lives and income of its members. The impact of FPOs performance on household income of its members should be high. Weak member centrality results in lack of interest of members in governance of FPOs

### **Patronage Centrality**

Patronage centrality denotes the significance of the farmer producer organization to the business in

which it is engaged in. The percentage of market share of the FPO can be an indicator of its patronage centrality. The higher the patronage centrality, i.e. higher the market share, the better it can alter the terms of exchange with other value chain actors in its favour.

### Domain Centrality

Domain centrality denotes the significance of the farmer producer organization to the local economy in which it operates. The higher the importance of the FPO in its local economy, the better it can influence the policy environment in favour of its objectives.

### 3.3 Structure of FPOs

As mentioned earlier, FPO is an organization with farmers as members. Farmers are organized into groups and these groups are further federated to form a FPO which can take any legal form as mentioned in the previous section. The typical structure is given in the figure below.

The structure and proposed roles that the federation at each level can take up is explained in the following sections.

#### Individual farmers at Household level

Individual farmers at Household level are the primary shareholders of the FPO. They have to play multiple roles in the FPO as listed below.

- Engage in agricultural production and avail the services offered by the FPO including procurement of crops.
- Actively participate in meetings of FIGs and contribute towards decision making in the FPO.
- Follow the agreed upon decisions/directives communicated by the FPO

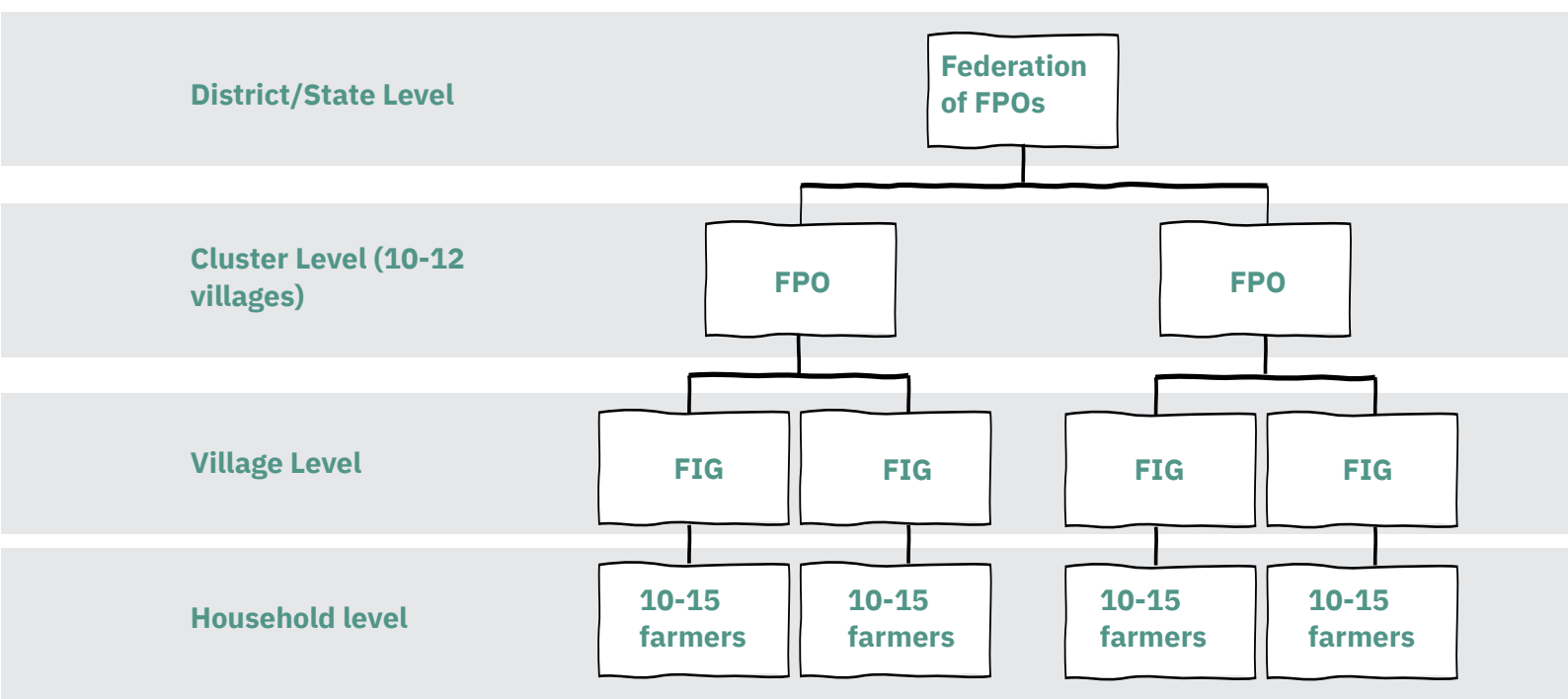


Fig 3.1 Structure of Farmer Producer Organization



## **Farmer Interest Groups (Producer Groups) at village level**

10-15 farmers come together at village level to form Farmer Interest groups or Producer Groups which are unregistered bodies. They are similar to SHG groups, and can jointly operate a bank account. Farmer interest groups can undertake the following activities at village level. There can be 5-10 FIGs in a village based on the participation of farmers.

- Crop planning in line with business plan of FPO
- Knowledge sharing and extension through Farmer field schools
- Own and manage agricultural machinery and implements for farming
- Engage in internal savings and lending
- Maintain books of accounts related to transactions between farmers and FPO
- Cleaning and grading of produce

## **Farmer producer organizations at cluster level**

100 – 150 Farmer Interest groups at a cluster level (multiple Gram Panchayats) may be federated to form a farmer producer organization. The farmer producer organization should be a legally registered entity. Some of the activities that a farmer producer organization can undertake on behalf of farmers are given below.

- Arrange inputs for farmers
- Aggregation of produce of farmers
- Arrange for credit on pre-production and post-harvest stage for farmers
- Establish marketing linkages with traders/processors

## **Federation of FPOs at district/state level**

FPOs can federate at district or state level and form an umbrella entity. This entity can facilitate the following on behalf of its member FPOs and farmers.

- Policy advocacy on behalf of farmers
- Explore wider markets such as export opportunities.
- Strategic partnerships with other actors in the value chain such as research institutions, corporates etc.

## **3.4 Governance and Management of FPOs**

There are three key actors which are responsible for the governance and management of FPOs. The roles of these three actors and how they interact with each other is summarized in the figure above. The roles of these three actors in the governance and management of day-to-day operations of an FPO is explained in the following sections.

### **General Body**

The general body of an FPO is comprised of all the shareholder member farmers of the FPO. General body elects and appoints directors to the Board of the farmer producer organization. The number of directors that need to be appointed will vary based on the legal form of the FPO. The General body will convene annual general meetings where the directors will report to the members the progress made on all activities taken up by the FPO and present the financial status of the organizations. General Body also needs to pass resolutions in annual general meetings to approve policy changes proposed by the Board of Directors.

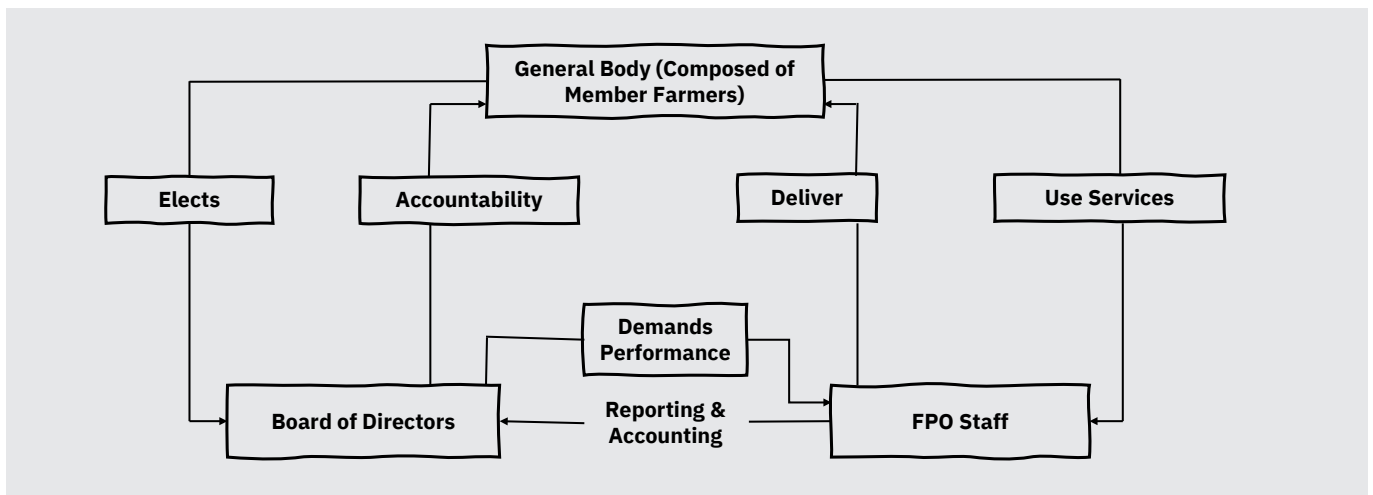


Fig 3.2. Governance and Management of FPCs

### Board of Directors

Board of directors establish specific long-term and annual objectives, and approve corporate strategies and financial plans. Board of directors will elect one among them as the Chairman of the Board. Board of directors also appoint chief executive officer and other similar officers who in turn manage the day-to-day operations of the FPO .

### FPO Staff

CEO and other staff members of the FPO will manage the day-to-day operations of the FPO. The members comprising the general body will also be interacting with the staff and management of the FPO while availing the services of the FPO . The staff members of the FPO report to the CEO, and the CEO is answerable to the board headed by the Chairman.

### 3.5 Stakeholders of FPO

A stakeholder of an organization is an individual/group of individuals/organizations that can affect the way the organization works or is affected by the organization. Stakeholders have to find ways to work together to ensure They are key to There are three broad categories of stakeholders for an FPO as listed below.

**1. Internal Stakeholders** – These are stakeholders who are part of the FPO itself – farmers, CEO and other staff members, Board of directors. FPOs success rely on the ability of the internal stake holders to work together toward the common objectives.

**2. Partners** – These are value chain actors/entities with whom FPO has already established relationships and trust.

**Other players in the value chain** – FPOs will also have to engage and transact with other actors in the value chain

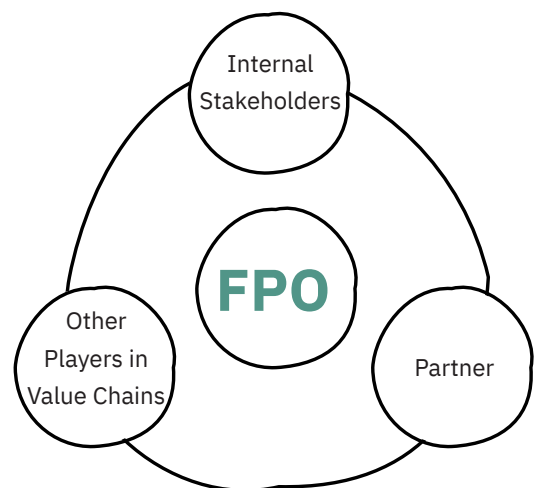


Fig 3.3. Stakeholders of FPO

### 3.6 Activities that can be undertaken by FPCs

- Production, harvesting, procurement, grading, pooling, handling, marketing, selling, export of primary production of the Members or import of goods or services for their benefit, provided that the Producer Company may carry on any of the activities specified in this clause either by itself or through other institution.
- Processing including preserving, drying, distilling, brewing, vinting, canning, and packaging of the produce of its members.
- Manufacture, sale or supply of machinery, equipment or consumables mainly to its members.
- Providing education on the mutual assistance principles, to its members and others.
- Rendering technical services, consultancy services, training, research and development and all other activities for the promotion of the interests of its members.
- Generation, transmission, and distribution of power, revitalization of land and water resources, their use, conservation and communication relatable to primary produce.
- Insurance of producers or their primary produce.
- Promoting techniques of mutuality and mutual assistance.
- Welfare measures or facilities for the benefit of Members as may be decided by the Board.
- Financing of procurement, processing, marketing which include extending of credit facilities or any other financial services to its members.

### 3.7 Government Schemes for FPOs

Central Sector Scheme “Formation and Promotion of 10,000 new Farmer Producer Organizations (FPOs)” Government of India has launched a new Central Sector Scheme titled “Formation and Promotion of 10,000 Farmer Produce Organizations (FPOs)” in February 2020 to form and promote 10,000 new FPOs in the country by financial year 2023-24. The total budgetary provision for the scheme is Rs.6865 cr. Some of the key features of the scheme are listed below

- The formation and promotion of FPO is based on Produce Cluster Area approach and specialized commodity-based approach. Produce Cluster Area for purpose of FPO formation and management herein means a geographical area wherein agricultural and allied produce such as h produce of similar or of almost similar nature is grown / cultivated; therefore, an FPO can be formed for leveraging economies of scale in production and marketing.
- Up to Rs. 18.00 lakh per FPO for a period of 3 years to meet the administrative and management expenses of the FPO.
- Provision has also been made for matching equity grant up to Rs. 2,000 per farmer member of FPO with a limit of Rs. 15.00 lakh per FPO.
- Provision of a credit guarantee facility up to Rs. 2 crores of project loan per FPO from the eligible lending institution to ensure institutional credit accessibility to FPOs.

## Equity Grant Scheme, SFAC

Equity Grant Scheme extends support to the equity base of Farmer Producer Companies (FPCs) by providing matching equity grants subject to maximum of Rs. 15.00 lakh per FPC in two tranches with in a period of 3 Year and to address nascent and emerging FPCs which have paid up capital not exceeding Rs. 30.00 lakh. The scheme aims to increase the viability of FPOs and improve their credit worthiness.

## Credit Guarantee Fund, SFAC

Credit guarantee is extended for loans availed by FPOs up to Rs.1 Crore from eligible lending institutions, i.e., Scheduled commercial banks, RRBs, NCDC, NABARD and its subsidiaries. The scheme aims to improve access to formal credit for FPOs by providing protection to lending institutions.

## Other key schemes

Government is also extending support to FPOs for setting up/modernizing infrastructure through some of the schemes shared below;

1. Pradhan Mantri Kisan Sampada Yojana - Under PMKSY, capital subsidy in the form of grants-in-aid ranging from 35% to 75% of the eligible project cost subject to a maximum specified limit is provided to investors under the various schemes for undertaking infrastructure, logistic projects and setting up of food processing units in the country.
2. PM Formalization of Micro Food Processing Enterprises Scheme - PM FME scheme is a central sector scheme with an outlay of INR 10,000 cr. to support the unorganized micro food processing units in the country through financial assistance, training and technical knowledge transfer, branding and marketing support. Capital subsidy in the form of 35% credit linked grant would be made available to SHGs, FPOs, cooperatives, state owned agencies and private entrepreneurs for development of common infrastructure facilities such as warehouse, cold storage and processing facility
3. Revamped National Food Security Mission – The scheme focusses on improving food security by promoting FPOs working on pulses and millets. Under the revamped NFSM, Government extends financial support for mobilization of farmers into FPOs, their training and capacity building, setting up procurement centers, setting up mini-dal mills, and branding and marketing of the produce.

## ACTIVITIES

1. Watch the below given videos and discuss the following questions
  - Amul India Story (12 minutes) <https://www.youtube.com/watch?v=8ogk8rLnUBs>
  - Interview with Mr. R.S. Sodhi, MD Amul (first 4 minutes) <https://www.youtube.com/watch?v=BQA8niwGp5I>
- 1.1. Who owns Amul?
- 1.2. What are the key differences between Amul different from other companies?
- 1.3. How did Amul address issues in dairy sector?
- 1.4. How does member farmers who are part of Amul benefit from Amul?

2. Read the case study on Amul's organization structure . Based on the information provided in the case study as well as from the videos already viewed, answer the following questions.
  - 2.1. Does Amul adhere to the cooperative principles? Discuss the same.
  - 2.2. Discuss the organization structure of Amul and role of the three tiers in its structure
  - 2.3. How is governance of Amul carried out?
  - 2.4. Who are the internal and external stakeholders of Amul?
  - 2.5. What are the various services Amul offers to their members?

## CASE STUDY - AMUL'S ORGANIZATION STRUCTURE

Amul has a 3-tier organization structure, with primary cooperatives at the village level, a cooperative union at the district level, and a cooperative federation at the state level. Broadly, the village cooperatives take the responsibility for procurement of the produce from the farmers, the district union is responsible for transportation and processing, and the federation is responsible for marketing and strategic planning and investment. The cooperatives are governed by a rotating board of farmer-elected directors, but the management is done by professional managers who are well empowered and largely independent. Apart for the agro-industrial activity of the dairy business, the cooperative undertakes substantial developmental agricultural/ dairy extension activities, and the provision of veterinary, breeding and other services.

### **Village Level Cooperative Society**

The primary level is the Village Cooperative Society under the three-tier structure. It has membership of milk producers of the village (usually 200 or more members per village) and is governed by an elected Managing Committee consisting of 9 to 12 elected representatives of the members. The Managing Committee elects a Chairman and appoints a Secretary and staff. The main function of this cooperative society is to collect milk from the milk producers of the village and make payments based on quantity and quality. It also provides support services to the members such as veterinary first aid, artificial insemination breeding service, sale of cattle-feed, mineral mixtures, and fodder seeds, and sometimes training on animal husbandry and dairying.

### **District level Milk Union**

The district-level Milk Union is the second tier under the three-tier structure. It has membership of Village Societies of the district through their Chairmen, and is governed by an elected Board of Directors consisting of 9 to 18 elected representatives from among the Village Society Chairmen. The Board of Directors elect a Chairman and appoint a professional Managing Director and staff. The main function of the Milk Union is to procure raw milk from the Village Societies of the district, transport it from the villages to the Milk Union owned dairy plant, and process it into pasteurized milk and other milk products. It also undertakes significant supportive activities such as veterinary services, breeding services, cattle feed and other inputs to the village societies and producers, and undertakes initiation, training and supervision of the village level societies.

### **State-level Federation**

The State-level Federation is the apex tier under the three-tier structure. It has membership of Milk Unions of the State through their Chairmen, and is governed by an elected Board of Directors from among the Chairmen of Milk Unions. It elects a Chairman and appoints a professional Managing Director and staff. The main function of the Federation is the marketing of the milk and milk products manufactured by Milk Unions. The Federation manages the distribution network for marketing of milk and milk products and maintains the supply chain network. It also provides support services to the Milk Unions such as technical inputs, management support and advisory services.

## **REFERENCES**

Farmer Producer Organizations, published by NABARD, 2015

Design issues in Producer Organizations, Prof. Tushaar Shah and Prof. K.V. Raju

Capacity Building of Board of Directors of Farmer Producer Organizations – A Trainer’s Guide, Published by GIZ, 2019

Compilation of Schemes and Policy Initiative for Supporting Farmer Producer Organizations (FPOs), Published by GIZ, 2019

Cooperative identity, values & principles, International Cooperative Alliance

04

## INTRODUCTION TO AGRICULTURAL VALUE CHAINS



## CHAPTER SUMMARY



### OBJECTIVES

- To understand the concept of Agricultural Value Chain
- To understand the role of various actors, the risks undertaken by them, and the associated costs and incomes.
- To understand the different types of value chain interventions
- To understand various value chain interventions that can be undertaken by FPOs

### TIME

5 hrs

### REQUIRED MATERIALS



Projector and Screen, White Board, Markers, PPT Slides



## GUIDELINES FOR INSTRUCTORS

S.N	TRAINING CONTENT	INSTRUCTOR ACTION	MATERIAL	TIME
1.	What is agricultural value chain ?	<ol style="list-style-type: none"> <li>1. Explain the definition of agricultural value chain as given in section 3.1. Explain the three categories of actors in the value chain</li> <li>2. Ask the participants to Identify one important crop in their village and write down who are the key actors and their roles in the value chain. And activities</li> <li>3. Define the term value as given in Section 3.1.2</li> <li>4. Ask the participants to write down how each actor in the value chain that they have identified creates value</li> </ol>	Projector and Screen, White board and markers	60 mins
2.	Revenue, Costs and Risks for value chain actors	<ol style="list-style-type: none"> <li>1. Ask the participants to list down the sources of revenue and cost for each of the actors that they have identified.</li> <li>2. Discuss the same using the table given in Section 3.2.</li> <li>3. Ask the participants to identify the key risks faced by each of the actors</li> <li>4. Discuss the various risks faced as given in Section 3.2.</li> <li>5. Discuss the costs and rewards associated with different players in the tomato value chain given in Section 3.3. Establish how farmers can realize better value by moving up the value chain.</li> </ol>	White board, Markers, PPT slides	90 mins



3. Value Chain interventions	1. Explain the different types of value chain interventions as explained in Section 3.3  2. Ask the participants to read the Case study on VAPCOL and discuss the questions given in Activity iv	Projector and Screen, White board and markers, Case study handouts	120 mins
4. Role of FPO in value chain interventions	Based on their understanding from VAPCOL case study, ask the participants how FPOs can facilitate different value chain interventions. Discuss the content in Section 3.4 to give an overview what roles an FPC can	Projector and Screen, White board and markers	30 mins



## TRAINING CONTENT

### 3.1. What is Agricultural Value Chain?

The term ‘Value Chain’ is composed of two key words – Value & Chain. Each of these concepts are explained clearly in the following sections.

#### 3.1.1. The Chain

In the context of agriculture, Chain corresponds to the **sequence of activities** and corresponding **actors** required to bring a basic agricultural product from production in the field to final consumption. Value chain comprises of three types of actors/activities as explained below

**1. Core actors** – The core actors in the context of agricultural value chains are usually farmers, aggregators/traders, processors, wholesalers, retailers and end consumers.

**2. Business Development Service providers** – These actors provide the services which support the activities undertaken by core actors. Input suppliers, financial service providers, agricultural extension officers, agricultural researchers, storage solution providers, transportation service providers etc are examples of business service providers in the agricultural value chain.

**3. Government and regulatory bodies** – Government and other agencies influence the functioning of value chains by putting in place policies which will create the enabling environment. For e.g., by declaring MSP for food crops, Government is trying to ensure that farmers receive a fair price for their produce.

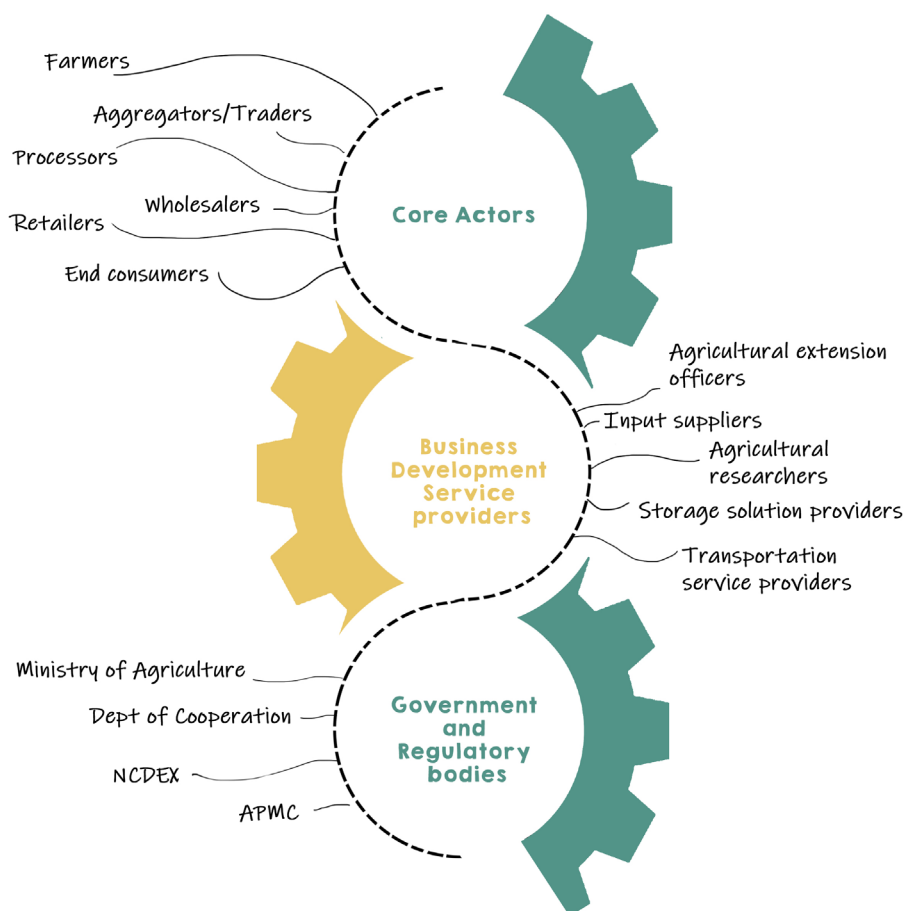


Fig 4.1. Actors in a value chain

### 3.1.2. Value

Each of the core actors/activities mentioned above adds value to the product, which is reflected in the price paid by the next actor in the stage. Value is the usefulness that consumer/customer experiences from a service of product. Value can be added to a product by changing the form, place, and time related to the product .



Fig 4.2. Form, Place and Time Value

## Form

In the context of agriculture, form corresponds to the physical features of the agricultural product. If the physical features of the product are changed to suit the requirement of other actors/customers, value is added to the products and other actors/customers will be willing to pay a higher price for the same. For example, when paddy is milled to produce rice, value is added by changing the form of paddy and the price willing to be paid by customer increases.

## Place

Value is added in the terms of place when a product is made physically available or accessible to actors/ others at a place which is most convenient for them. For example, when a retailer makes available cereals and pulses in his/her shop near a residential area, he/she is adding value by making the product available near the customer/consumer. Similarly, an aggregator is adding value by transporting the produce that he has purchased from farmers in the village to the nearest Mandi, thus making it available for traders in the Mandi.

## Time

Time value exists when the product is made available at a time which is most convenient or desirable for the actors/end customers. For example, when a trader stocks a crop and sells it when there is an under supply of that crops in the market, he/she is adding time value to the product.

### 3.1.3. Core Actors in value chain and their roles

Table 4.1 Types of value addition by core actors

CORE ACTORS	FORM VALUE	PLACE VALUE	TIME VALUE
<b>Farmer</b>	Creates the primary product which moves along the value chain		
<b>Aggregators/ Traders</b>	Changes the form of the produce by cleaning and grading the produce as per requirement of buyers.	Transports the produce to market yards/ processing units for easier access by bigger traders/processors	Holds inventory so that they can supply produce during periods of shortage.
<b>Processors</b>	Changes the form of the produce to suit requirement of end consumer		Holds inventory so that product is available throughout the year for wholesalers/retailers.
<b>Wholesalers</b>		Brings the product near to the retailers so that they can easily access it	Holds inventory so that retailers can buy products in required quantities as per demand.
<b>Retailers</b>	Offers smaller packet sizes which suit the requirement of end consumer	Offer the products near to the end consumer	Holds the inventory so that end consumer can buy the products as per their requirement.

### 3.2. Revenue, Costs, and risks for core actors

Table 4.2 Risks, costs and revenues for core actors in Agricultural Value chains

CORE ACTORS	REVENUE	COSTS INVOLVED	RISKS INVOLVED
<b>Farmer</b>	Income from selling produce to trader/ aggregator	Cost of inputs Cost of capital (interest) Labour cost	Production risk Price risk Financial Risk Institutional risk
<b>Aggregators/ Traders</b>	Margin from selling the produce purchased from farmers to processors/ traders	Labour cost Packing cost Transportation cost Storage cost Cost of capital	Price risk Financial Risk Institutional risk
<b>Processors</b>	Margin from selling the processed quantity	Labour cost Capital cost Packing cost Processing cost (Raw material cost)	Price risk Financial Risk Institutional risk
<b>Wholesalers</b>	Margin from selling the produce purchased from processor to retailers	Labour cost Storage cost Capital cost	Price risk Financial Risk Institutional risk
<b>Retailers</b>	Margin from selling the produce purchased from wholesaler to end consumer	Storage cost Capital cost	Financial Risk

The risks mentioned in the above table are explained below.

**Production risk** derives from the uncertain natural growth processes of crops and livestock. Weather, disease, pests, and other factors affect both the quantity and quality of commodities produced.

**Price risk** refers to uncertainty about the prices producers will receive for commodities or the prices they must pay for inputs. The nature of price risk varies significantly from commodity to commodity

**Financial risk** results when the farm business borrows money and creates an obligation to repay debt. Rising interest rates, the prospect of loans being called by lenders, and restricted credit availability are also aspects of financial risk.

**Institutional risk** results from uncertainties surrounding Government actions. Changes in import/export rules, regulations for chemical use, MSP or income support payments are examples of government decisions that can have a major impact on the farm business.

### 3.2.1. Share of various players in the total value

The share of various actors in the tomato value chain<sup>8</sup> is given below as an example.

Table 4.3. Share in consumer rupee for various value chain actors

CORE ACTORS	COST MARGIN (INR/QUINTAL)	SHARE IN CONSUMER RUPEE (IN %)
1. Price received by farmer	1123	32.4
2. Total trader's cost	498	14.4
3. Trader's margin (4-2-1)	387	11.2
4. Delhi wholesale price (Max price from Agmarknet)	2008	
5. Semi wholesaler total cost	341	9.8
6. Semi wholesaler margin (10%)	201	5.8
7. Price to retailer	2549	
8. Retailer cost and margin	914	26.4
9. Price paid by consumers (Delhi retail price)	3463	100.0

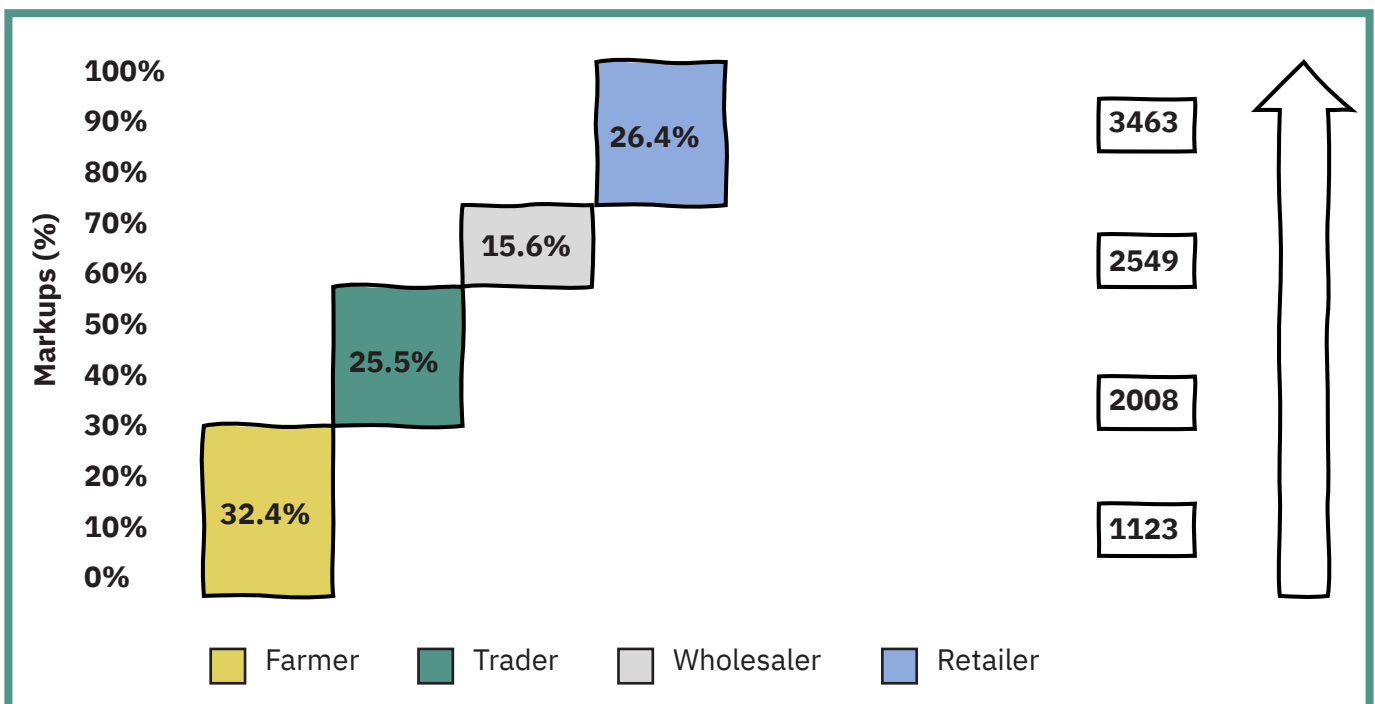


Fig 4.3 Share of different actors in tomato value chain

<sup>8</sup> Tomato, Onion and Potato (TOP) Value Chains, by Ashok Gulati, Harsh Wardhan, and Pravesh Sharma, published in Agricultural Value Chains in India, pp 33-97, by SpringerLink

As shown in the above table and figure, only 32% of the price paid by the customer is received by the farmer, while the remaining is shared between the trader, wholesaler and retailer. If the farmer intends to capture a higher share of the price paid by the customer, he/she should identify opportunities for moving up the value chain. But at the same time, the costs and risks associated with such a decision should be compared against the possible benefits. The various strategies for upgrading farmers along value chains is explained in the next section.

### 3.3. Interventions for Upgrading Farmers in Agri-value chains

As seen in the previous sections, different actors play different roles in the value chain, and in the process add value to the product, which is finally reflected in the price paid by the end consumer. A combination of interventions is needed in order to assist farmers in increasing their share in the value chain. Some of the key intervention strategies are explained in the sub-sections below

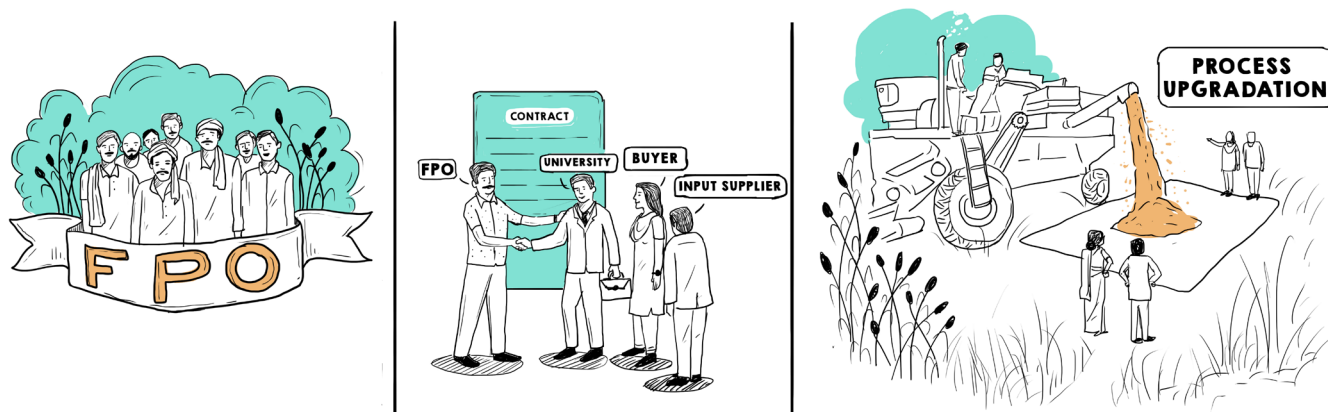


Fig 4.4 Types of Value chain interventions

#### 3.3.1. Horizontal Coordination

Horizontal coordination means organizing farmers into a collective structure like producer groups, cooperatives or producer companies. This is the most significant intervention as it allows small producers to achieve economies of scale and bargaining power by coming together. It is a pre-requisite for other forms of upgrading discussed in the following sections.

#### 3.3.2. Vertical Coordination

Vertical coordination means establishing relationship and trust between farmers and other actors. The focus in vertical coordination is to establish a relationship which is sustainable in the long-term rather than a relationship which ends with one or two transactions. For example, a group of farmers cultivating mangoes can establish a relationship with an exporter for supplying their produce to foreign markets and realize higher price in the process.

The key difficulty in establishing vertical coordination is that it requires building trust between the parties trying to create long-term relationships and it will be a long-term process.

Horizontal coordination is a pre-requisite for establishing linkages with other actors in the value chain as individual farmers will find it difficult to reach out to and establish relationship with institutional players.

### 3.3.3. Process Upgradation

Process upgradation involves improving the practices adopted by farmers in production and post-harvest phase so as to either improve the yield of the produce or quality of produce leading to higher price realization. For example, farmers can adopt the latest package of practices prescribed by Agricultural Universities and improve the yield of their produce.

### 3.3.4. Product Upgradation

Product upgradation involves farmers improving the quality of their product to meet the quality standards and expectations of farmers. For example, farmers can adopt fair trade / organic practices and improve the product quality, thus realizing better prices.

### 3.3.5. Functional Upgradation

Functional upgradation refers to taking up activities in the value chain which add higher value to the product. For example, tur farmers can form an FPO and set up a mill for processing dal, and in turn sell to wholesalers thus increasing their share of value in the value chain. In this case farmers are taking up processing activity which is usually performed by a mill owner in the value chain.

## 3.4. Role of FPO in value chain interventions

A farmer producer organization (FPO) is an organization in which farmers are the shareholders. In other words, it is an organization owned by farmers, which will work towards enhancing the share of value that farmers realize from the value chain. FPO is an outcome of horizontal coordination and is the first step in value chain intervention. The table below gives a snapshot of how FPOs can play a role in value chain interventions on behalf of member farmers.

Table 4.4. Potential roles of FPO in value chain interventions

TYPE OF VALUE CHAIN INTERVENTIONS	POTENTIAL ROLES OF FPO
<b>Horizontal Coordination</b>	<ul style="list-style-type: none"><li>- Farmers are brought together to form the FPO at this stage.</li><li>- FPO becomes a forum for farmers or their representatives to discuss various issues faced by them and explore possible solutions.</li></ul>
<b>Vertical Coordination</b>	<ul style="list-style-type: none"><li>- FPO can enter into agreements with input providers for bulk supply at cheaper rates.</li><li>- FPO can enter into agreements with institutional buyers for procurement from buyers</li><li>- FPO can enter into agreements with banks/financial institutions for availing</li></ul>
<b>Process Upgradation</b>	<ul style="list-style-type: none"><li>- FPO can facilitate farmer field schools in coordination with Agricultural universities to build capacities of farmers on modern technologies.</li></ul>

### Product Upgradation

- FPO can gather market intelligence through interactions with customers and other actors for improving the product/changing the product to suit customer needs

### Functional Upgradation

- FPO can raise capital from external sources and set-up procurement centres, processing plants etc and enable farmers to move up the value chain

## 3.5. Role of Procurement Centre & Procurement Centre Manager in Value chain interventions

Procurement Centres at village level are established with the objective of bringing markets close to the farm gate. They will primarily be points of aggregation, through which FPOs can procure the produce from their member farmers. Procurement centres will also act a mini storage facility at village level. Every procurement centre will have a manager whose key roles are as listed below

- Manage procurement centre operations
- Extending marketing education to farmers
- Mobilizing farmers and coordinating between farmers and FPO
- Building business linkages with buyers of agricultural produce

These roles will be explored in detail in Chapter 4 of this training module.

## ACTIVITIES

1. Identify one important crop in your region and write down who are the key actors and their roles in the value chain.
2. You have identified the key actors in the value chain. Now mention how does each of these actors add value to the product as it moves along the value chain?
3. List down the costs, revenue sources and risks associated with each of these actors?
4. Read the case study on VAPCOL provided at the end of the chapter and answer the following questions.
  - a. How has VAPCOL integrated farmers into its organization structure?
  - b. What are the types of interventions that VAPCOL is carrying out in the agricultural value chain of various crops?
  - c. What are the benefits for farmers who are members of VAPCOL over non-members?



## REFERENCES

Training Manual on Value Chain Analysis of Dryland Agricultural Commodities, A Amarendar Reddy, ICRISAT

Tomato, Onion and Potato (TOP) Value Chains, by Ashok Gulati, Harsh Wardhan, and Pravesh Sharma, published in Agricultural Value Chains in India, pp 33-97, by SpringerLink

The Four Types of Economic Utility, by Raphael Zeder, Quickonomics (<https://quickonomics.com/the-four-types-of-economic-utility/>)

Training Module on Value Chain Extension, Published by IRRI and CRISP

## CASE STUDY - VASUNDHARA AGRI-HORTI PRODUCER CO. LTD (VAPCOL)<sup>9</sup>

### 1. Introduction

Vasundhara Agri-Horti Producer Co. Ltd (VAPCOL) is a multi-State second-tier farmer organization registered as a Producer Company under the Companies' Act. Its members are first-tier Farmer Organizations (registered or unregistered) having primary membership of individual farmer producers. Farmer Organizations are equity holders in VAPCOL. The Company also has non-equity-holding Institutional Members who play a supportive role for the Farmer organizations.

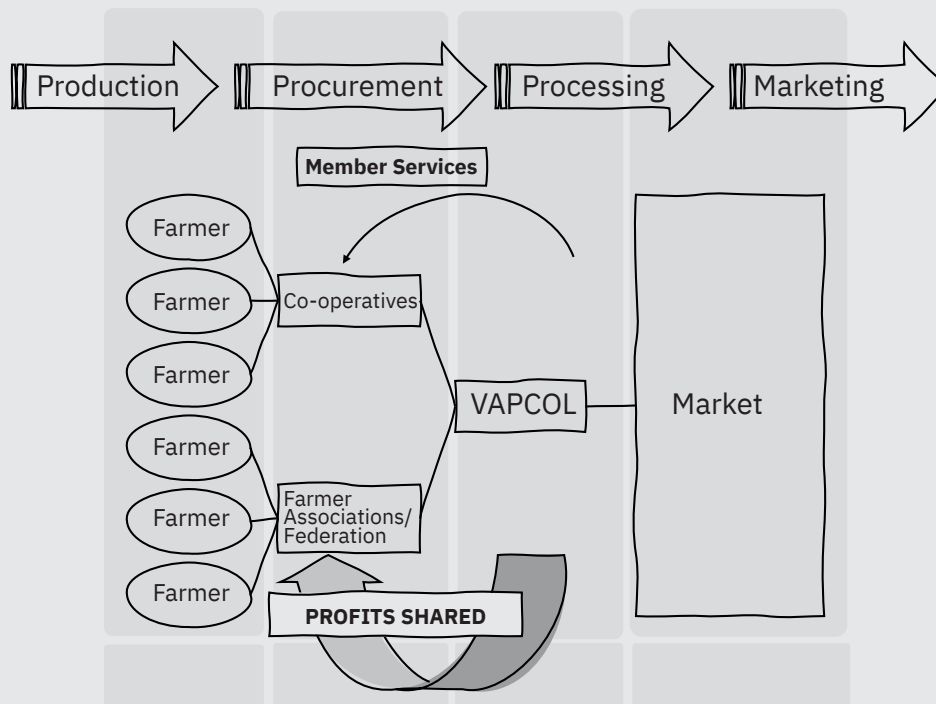
VAPCOL was registered in the year 2004. After an initial period of building a member-base, it began operations in 2008-09; VAPCOL was formed for the purpose of carrying out the business of procurement, grading, marketing, selling, export of primary produce of the members or procurement of goods or services for their benefit. Today the producer company has a membership base of 43 producer organizations spread across various States of India representing a primary membership base of about 41, 000 farmers. VAPCOL deals in multiple commodities produced by its members primarily fruit and nuts.

### 2. Values and Guiding Principles

VAPCOL ensures satisfaction to customers without compromising on quality standards. VAPCOL's effort is towards creating sustainable livelihood for rural communities and building linkages with markets. VAPCOL has been promoted with the following broad guiding principles -

- Develop market linkages and take up marketing of the fresh and processed produce of its members, particularly in markets not directly accessible to them individually
- Provide a common brand image for the produce
- Support members in accessing appropriate technology for value chain operations
- Assist members in obtaining professional inputs in technical and managerial areas
- Assist members in establishing facilities and infrastructure for value chain operations
- Take up capacity building of member organizations.

<sup>9</sup>Source – [www.vapcol.in](http://www.vapcol.in)



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- Assist members in establishing facilities and infrastructure for value chain operations
- Take up capacity building of member organizations.

## 3. Operations

VAPCOL operations are handled through 3 of its branch offices located at Vandsa (Gujarat), Peint (Maharashtra) and Udaipur (Rajasthan) and it is headquartered at Pune (Maharashtra). Main operations undertaken by VAPCOL are procurement of produce by farmers, its processing and marketing of the products under the brand name of "Vrindavan".

### 3.1 Procurement

The member organizations of VAPCOL directly own the entire chain of activities right from procurement of raw produce from the farmer up to the final processing and quality-wise grading of the produce, while VAPCOL is responsible for the marketing of these products. It also provides technical support in production processes, quality management and packaging. Other than that, it disburses working capital loan to members for smoothly carrying out their operations. This loan has been availed from NABARD which is further extended to the members. All the above-mentioned activities are carried out in all three branch offices.

### 3.2 Quality Control

VAPCOL ensures quality of products under supervision of Food Technologists and Agri-graduates. All the products have to pass through the procurement norms set by the Company.

### 3.3 Marketing

VAPCOL is promoting and marketing the farmers' produce under the brand name "Vrindavan", which presents varied range of products such as fresh fruit and derivatives of raw and ripe Mango, Amla derivatives, plain and flavored Cashew Kernel and other F&V preserves. All the branches are involved in marketing of the products. It has explored several marketing options including retail, distributor, wholesale, Kiosks as well as hyper-marts. In addition to that, VAPCOL has also forayed in e-market channels such as Snapdeal and Amazon with Vrindavan products. The profit generated from these commercial operations is majorly paid back to the member organizations either as patronage dividend or as equity dividend. There is minimal surplus that is retained by VAPCOL and this is mainly applied for expanding the marketing activities and for covering the organizational overheads.

### 4. VAPCOL's Products

<b>Fresh Fruits</b>	Kesar and Alphonso Fresh Mangoes in the season.
<b>Pickles, Preserves</b>	Mango Pickle, Sweet Mango Pickle, Lemon Pickle, Sweet Lemon Pickle, Methiya Pickle, Mixed Pickle, Karvanda Pickle, Chilly Pickle, Mango Chhunda, Mango Jam, Mixed Fruit Jam and Strawberry Jam, Amla Syrup, Amla Juice, Mango Crush, Mango Syrup, Strawberry Syrup, Kokam Syrup.
<b>Pulp and Bars</b>	Alphonso and Kesar Mango Pulp (Aamras), Mango Slice, Amla Candy.
<b>Dry Fruits</b>	All grades of Cashew Kernels, Salted, Chilly coated and Pepper Coated Cashew Diet Nuts.



05

## PROCUREMENT CENTRE MANAGEMENT



## CHAPTER SUMMARY



### OBJECTIVES

- To understand the importance of procurement centre and the function of procurement managers
- To understand the infrastructure requirements for a procurement centre
- To understand procurement planning and steps involved in procurement
- To get an overview of other roles of Sourcing manager including mobilizing farmers, extending marketing education, and building market linkages

### TIME

4 hrs

### REQUIRED MATERIALS



Projector and Screen, White Board, Markers, PPT Slides



## GUIDELINES FOR INSTRUCTORS

S.N	TRAINING CONTENT	INSTRUCTOR ACTION	MATERIAL	TIME
1.	Procurement Centre	<ol style="list-style-type: none"> <li>1. Explain the role of procurement centre and functions of procurement managers as described in Section 3.1.</li> <li>2. Explain the basic requirement in terms of infrastructure as given in Section 3.1.1.</li> </ol>	Projector and Screen, PPT Slides	30 mins
2.	Procurement Management	Explain the various activities involved in procurement management as described in Section 3.2.	Projector and Screen, PPT Slides	30 mins
3.	Procurement Planning	<ol style="list-style-type: none"> <li>1. Ask the participants to complete Exercises 1 – 5.</li> <li>2. Explain the key factors to keep in mind while conducting procurement planning as given in Sections 3.2.1 and 3.2.2</li> </ol>	Projector and Screen, PPT Slides, Whiteboard and Markers	90 mins
4.	Procuring from farmers, Storage and Selling	<ol style="list-style-type: none"> <li>1. Discuss the steps involved in procurement from farmers as given in Section 3.2.3</li> <li>2. Give an overview of Storage and Selling activities. These will be further discussed in the following chapters</li> </ol>	Projector and Screen, PPT Slides.	30 mins

5. Mobilizing farmers and Extending Marketing education	<ol style="list-style-type: none"> <li>1. Discuss the key points to be kept in mind while mobilizing farmers</li> <li>2. Discuss the need for building awareness among quality parameters among farmers</li> </ol>	Projector and Screen, PPT Slides.	30 mins
6. Building Market Linkages	Discuss the key points to be kept in mind while interacting with traders as given in Section 3.7	Projector and Screen, PPT Slides.	15 mins
7. Legal Requirements	Discuss the key legal requirements as given in Section 3.6	Projector and Screen, PPT Slides.	15 mins



## TRAINING CONTENT

### 3.1. Procurement Centre

Procurement Centres at village level are established with the objective of bringing markets close to the farm gate. They will primarily be points of aggregation, through which FPOs can procure the produce from their member farmers. Procurement centres will also act a mini storage facility at village level. Every procurement centre will have a manager whose key roles are as listed below. They will be explained in detail in the following sections.

- Procurement Management
- Mobilizing farmers and coordinating between farmers and FPO
- Extending marketing education to farmers
- Building business linkages with buyers of agricultural produce



Fig 5.1 Roles of procurement manager

## Basic Requirements of Procurement Centre

The characteristics of an ideal procurement centre is listed below. These should be kept in mind while identifying a suitable space for establishing the procurement centre



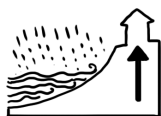
1. Procurement Centre should be located at a convenient location which is close to villages which with high supply potential.



2. Procurement Centre should have easy access to pucca roads and preferably near highways for easy transportation of goods.



3. Procurement Centre should be constructed far away from waterbodies/humid areas, otherwise the possibility of spoilage of the produce stored in it will be strong.



4. Procurement Centre should have a raised foundation to avoid flooding or runoff seeping through the floor



5. Adequate storage space (as per the requirement) should be available. A rule of thumb for estimating the space is 6 Sqft per MT of produce.



6. Procurement Centres should preferably have access to drying yard or open field with sufficient to dry the produce if required.



7. Procurement Centres should be properly ventilated with sufficient windows and skylights.

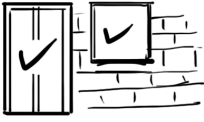


8. The roof of the Procurement centre should be strong and free from leakage. Otherwise rain water can seep from the roof and cause damage to the goods kept in it. Therefore, the roof should be inspected at regular intervals and it should also be repaired as required.



9. The walls of the Procurement Centre should not have holes and the windows should also have doors to prevent birds entering the warehouse.





10. Doors should be strong and in good condition to ensure the safety of the goods kept in the warehouse.



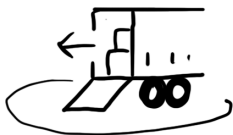
11. The Procurement Centre and area surrounding it should be well drained to prevent water from entering the warehouse during rainy season.



12. The electrical wiring in the Procurement Centre should be concealed and in good condition. Poor wiring can lead to fire in procurement centres.



13. Proper arrangements should be there to protect the goods from sunlight, rain, wind, dust, moisture, pests etc.



14. Sufficient parking space should be there inside the premises to facilitate easy and quick loading and unloading of goods.



15. Procurement centres shouldn't be opened in places which are isolated as it increases the risk of theft. Round the clock security arrangements should be there in such a case to avoid theft of goods.



16. The building should be fitted with latest fire-fighting equipment to avoid loss of goods due to fire.



17. Preferably there should be a big wall for security to prevent trespassing by humans/animals

**In addition to the above characteristics, the procurement centre should have the following available.**



1. **Gunny Bags** - To store and transport the grains/oilseeds purchased. Natural fibre (Jute) bags are preferred as they will ensure proper aeration, doesn't get damaged due to use of parkhi, and have longer life.



2. **1MT weighing scale** - Industrial scales for weighing up to 1MT should be available in the procurement centre.



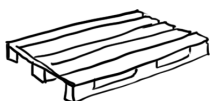
3. **Quality testing equipment** - All the required tools and equipment for quality assaying of produce should be available at the Procurement Centre. The details of the same are given in Chapter 6.



4. Procurement should have a cupboard for storing the documents and smaller tools/equipment safely.



5. Tarpaulin sheets for covering the stacks in case of rains or to be used for drying the produce



6. Pallets for use as dunnage

### 3.2. Procurement Management

Procurement centre will be the last mile touch point for FPO. The primary function of a village level procurement centre will be to manage procurement of produce from farmers on behalf of the FPO. The various processes involved in the procurement operations is shown in the figure below. The same is explained in the following sub-sections.

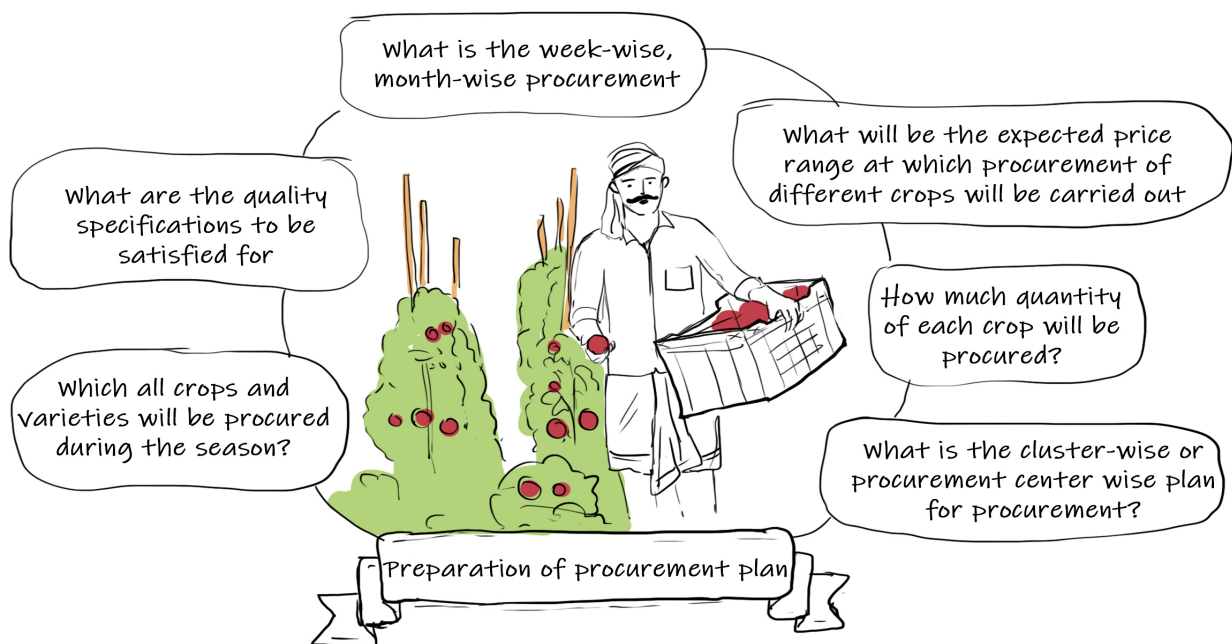


Fig 5.2 Factors to be considered for Procurement planning

### 3.2.1. Preparation of procurement plan

The farmer producer organization should prepare a procurement plan well in advance before the onset of harvest season. The procurement plan should answer the following questions.

- Which all crops and varieties will be procured during the season?
- How much quantity of each crop will be procured?
- What are the quality specifications to be satisfied for procurement?
- What will be the expected price range at which procurement of different crops will be carried out?
- What is the cluster-wise or procurement center wise plan for procurement?
- What is the week-wise, month-wise procurement plan?
- How much credit or fund will be required for procurement?
- How to fund /credit will be arranged for the procurement?

#### **The following factors should be considered while preparing the procurement plan.**

1. The crops which will be procured by the FPO should be decided based on the following factors.
  - Demand for the identified crops in the market, and preferably FPO has already established network of buyers for the crops.
  - Crops are cultivated in abundance by the member farmers.
  - The storage needs of the crop should be in line with the available arrangements.
  - There is economic benefit for FPO and farmers in FPO procuring the crop from farmers
2. The quantity of crops to be purchased should be decided based on
  - Estimated demand from buyers
  - Availability of Working capital with FPO for procurement
  - Availability of storage space for storing the procured produce
  - Availability of manpower for procurement
3. The quality parameters of crops to be purchased should be decided based on the requirement from buyers. FPO should identify and interact with buyers to understand their requirements.
4. FPO should base their plan on estimated prices of various crops for the season. FPO should estimate the same by discussing with various market actors including traders and processors.
5. FPO should prepare procurement center-wise plan based on the distribution of villages and production/procurement potential from each village.

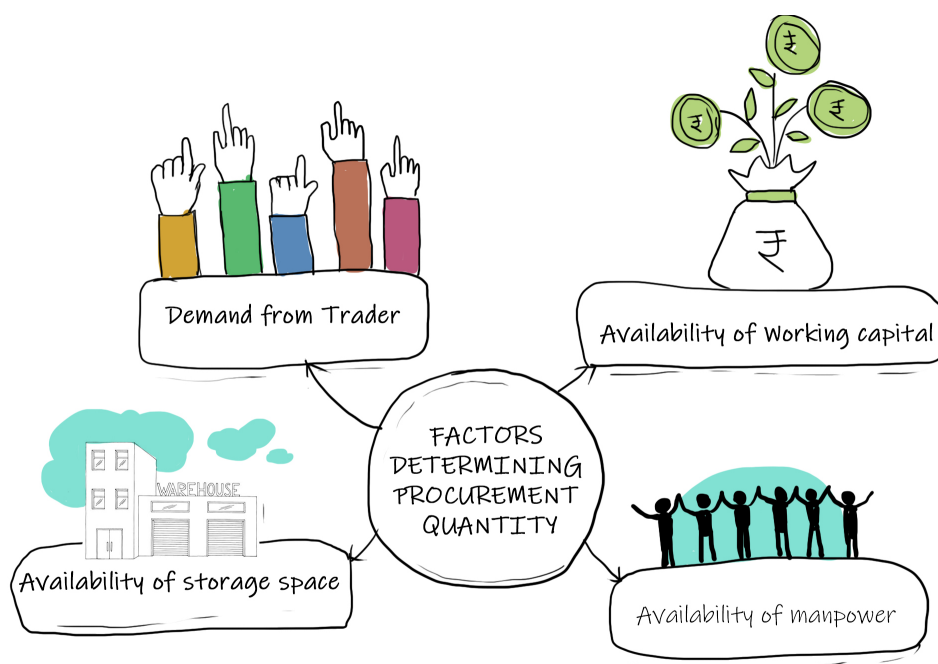


Fig 5.3 Factors determining procurement quantity

### 3.2.2. Preparation of Procurement plan by Procurement Centre

The procurement centre manager should prepare a procurement plan for the villages in his/her area. This should be done in coordination with the farmer groups and their representatives. The steps involved in preparing the plan are laid out below.

1. Organize a meeting with representatives of farmer groups from all the villages in the catchment area. Communicate the procurement plan allotted for the center, i.e., share the details of crops, quality requirements, quantity requirements, and expected prices to the farmer representatives.
2. Further, advise the representatives to organize meetings at their group level and prepare a group-wise procurement plan based on the willingness of farmers. The plan should contain the name and contact details of farmers, name of crop/variety, quantity and expected date/week during which crop will be ready for procurement.
3. Procurement Center manager can also attend some of the group level meetings to ensure that the information is shared correctly to the farmers.
4. Collect and collate the procurement plans prepared at the group level to prepare the procurement plan for the center. The same should be communicated to the FPO. If there are any major deviations are there from the plan allotted by FPO, the same should be modified suitably.

### 3.2.3. Procurement of produce from farmers

The following are the steps to be followed for procuring the produce from farmers.

1. FPO should communicate the daily/weekly prices for the different crops/varieties/ quality grades to the Procurement Center Managers.

Procurement Center Managers should further communicate the same to farmer groups on a daily basis.

3. A weekly procurement sub-plan should be prepared based on the previously prepared procurement plan in co-ordination with the farmer groups.
4. A route plan should be prepared to visit the villages. While preparing the route plan, care should be taken to ensure that capacity of the vehicle is fully utilized and distance covered is minimized.
5. Visit the villages for procurement as per the plan. Make sure to take along all required tools and equipment like weighing scale, quality assaying tools etc.
6. In the village, visit each farmer individually, ensure that quality testing of the produce is carried out and weigh the produce to be procured. Issue a signed receipt to the farmer containing quantity procured, quality specifications, price per kg or quintal, and total value of the produce.
7. On completing the procurement, the details of the day's procurement should be recorded and the same should be shared with FPO for processing the payment to the farmers.

#### **3.2.4. Storage of Produce**

The produce procured from the farmers should be stored at the facility available in the Procurement centre premises. The measures to be taken for safe storage is explained in Chapter 6.

#### **3.2.5. Selling the Produce**

FPO will identify suitable buyers for the commodity stored in the procurement centres. The Procurement centre manager, on receiving instructions from FPO, should ensure that the required quantity of the crop is loaded and transported from the procurement centre.

### **3.3. Mobilizing farmers and coordinating between farmers and FPO**

The success of FPOs and procurement centres is determined by participation of farmers in utilizing the services offered by the FPO such as supply of inputs, procurement and so on. Procurement Centre managers play a key role in connecting the farmers to the FPOs and building awareness and trust among the farmers. Procurement Centre Managers perform the following tasks for building rapport between farmers and FPOs.

1. Attend farmer group meetings in the villages regularly.
2. Build awareness on the need for collective action
3. Educate farmers on the need for FPOs and how FPOs can contribute to their well-being.
4. Educate farmers on how FPOs are their own businesses and profits generated by the FPO will be shared with them as patronage bonus.
5. Help farmers understand the various value chain interventions that can be carried out by the FPO.
6. Ensure that all the decisions of the FPO are communicated to the farmers and clear any doubts that farmers may have regarding the same.
7. Interact regularly with farmers, understand their expectations from the FPO, and communicate them to the FPO management.

### 3.4. Extending Marketing Education to farmers

The Procurement centre manager should also contribute towards building awareness of farmers on various aspects of marketing of produce including quality parameters, quality testing and price information. Procurement manager can use farmer group meetings as forum for giving inputs to farmers on the above-mentioned aspects.

### 3.5. Building linkages with buyers of agricultural produce

Procurement centre managers will directly interact with buyers of agricultural produce. It is important for them to invest time and energy to build relationships with buyers. The following tips may be followed to build and maintain relationships.

1. Treat all buyers as top priority and deliver the best experience to the buyers in all aspects.
2. Listen to the buyers and understand their expectations very clearly.
3. Be friendly and polite while interacting with buyers.
4. Maintain communication with focus on building long term relationship.
5. Get feedback from the buyers on the quality of produce supplied.

### 3.6. Legal Requirements for operating Procurement Centers

The following legal requirements should be completed before an FPO can operate Procurement Centres

1. Registration of FPO under relevant act.
2. License from APMC Mandi for procuring produce from farmers
3. Verification and stamping of weights and measures used by Civil Supplies department.
4. AGMARK Certification for quality standards

## EXERCISES

1. Your procurement center caters to 100 farmers in 5 villages. The average landholding of farmers in these villages is 3 acres. 70% of the area is under Groundnut and the average yield is 8 quintals per acre. The average price of Groundnut during the last season was Rs. 5000 per quintal. The village wise number of farmers is given in the table below. Estimate the village-wise quantity of Groundnut that will be available for procurement and the total value of produce that will be available for procurement.

VILLAGE NAME	NO. OF FARMERS	DISTANCE FROM PROCUREMENT CENTRE
A	25	5 km
B	10	2 km
C	15	7 km
D	30	3 km
E	20	8 km

2. You have talked to two traders in your vicinity for selling the groundnut. Their requirements are as given below.

TRADER NAME	GRADE REQUIRED	QTY REQUIRED	PRICE OFFERED PER QUINTAL (RS.)CENTRE
ABC	I	50 tons	5200
XYZ	II	30 tons	5150

From your past experience, you know that on an average 60% of produce is Grade I, 30% is Grade II, and 10% is Grade III. Prepare a village wise procurement plan for Grade A and Grade B produce for supplying to the traders.

3. Assume that all the farmers want to supply their produce to the FPO. Is the demand from the above two traders sufficient to sell all the produce from the farmers? If not, how will you manage the procurement?

4. Assume that the procurement centre has a storage capacity of 30 tons. You have rented a vehicle which can carry 6 tons of produce at a time as it takes on day to procure 6 tons after proper quality testing for a team including 1 quality specialist and labourers. How will you schedule trips to the villages and what timelines will you commit to the two traders for supplying the produce?

5. Suppose Trader ABC wants the produce within one week. How many vehicles and teams will you need to carry out procurement? How will you schedule the procurement from farmers (village-wise)? How will you plan the dispatch to the trader?

## AGMARK CERTIFICATION

AGMARK stand for Agricultural Mark. AGMARK Certification is granted by Government of India as a benchmark for quality for agricultural and horticultural products as well as food and beverages. The Government of India, through its agency, Directorate of Marketing and Inspection (DMI), lays down standards for agricultural products which is implemented at State level. It is a voluntary certification, unless made compulsory as per the provisions of the Food Safety and Standards (Prohibition and Restriction on Sales) Regulations, 2011.

The person/ company may either access the website <https://dmi.gov.in> or visit the nearest office of the Directorate of Marketing and Inspection (DMI) in order to get the required application form. Form - A specifies the application for grant of Certificate of Authorisation for Grading and Marking of commodities for the domestic market. Along with the application form, the necessary documents shall be annexed and enclosed along with the prescribed application fee in accordance with the nature of the commodity for which the application is being filed.

In order to be eligible for grading and certifying a notified commodity under AGMARK an entity must

- have the necessary infrastructure to process the commodity
- have access to an approved laboratory for grading or must have their own laboratory

Only if these conditions are met, the person may apply to the office of the DMI for grant of Certificate of Authorization, which will be granted once the verification process is complete which takes about 30-40 days.

Till date, grade standards for 222 agricultural commodities have been notified. These include fruits, Vegetables, cereals, pulses, oilseeds, vegetable oils, edible nuts, fibre crops ghee, spices, honey, creamery butter, wheat, atta, besan, etc. Some of the major crops covered under AGMARK Certification is given in table below.

CROP CATEGORIES	LIST OF CROPS
<b>Cereals</b>	Ragi, Jowar, Maize, Barley, Bajra, Rice, Wheat, Basmati Rice
<b>Pules</b>	Black Gram, Green Gram, Lentil, Red Gram, Kabuli chana, Bengal Gram, Peas, Moth
<b>Vegetables</b>	Bitter Gourd, bottle Gourd, tomato, sponge gourd, cucumber, brinjal, cabbage, Drumsticks, coriander leaves,
<b>Fruits</b>	Grapes, Litchi, mangoes, pomegranate, pineapple, guavas, Bananas, plum, papaya, apples
<b>Edible Nuts</b>	Ground nut, Cashew nut, Arecanut, Walnuts
<b>Spices</b>	White pepper, Clovers, Black pepper, Ajwain, Jeera, Tamarind, nutmeg, saffron
<b>Fibre Crops</b>	Cotton, Jute, Aloe Fibre, Palmyra Fibre



06

## QUALITY ASSAYING



## CHAPTER SUMMARY



### OBJECTIVES

- Understand the concept of quality
- Understand the various quality parameters for agricultural commodities
- Understand the process of sampling and quality assaying for cereals, pulses and oilseeds

### TIME

6 hrs

### Resource persons and Materials required



- Support of a quality analyst from a nearby warehouse or quality testing lab should be taken for organizing this session.
- Projector and Screen, White Board, Markers, PPT Slides
- Tools for quality assaying – Moisture meter, digital weighing balance. Sieves, enamelled plates, forceps, magnifying glass, scoops. One set each for a group of 5 participants.
- Samples of various crops grown in the regions for testing



## GUIDELINES FOR INSTRUCTORS

S.N	TRAINING CONTENT	INSTRUCTOR ACTION	MATERIAL	TIME
1.	What is Quality?	<ol style="list-style-type: none"> <li>1. Ask the participants to define what they understand by quality of a product/service by discussing examples of milk, clothes, vegetables, hair saloon/beauty parlour etc.</li> <li>2. Discuss the two aspects of quality as defined in Section 3.1.</li> <li>3. Discuss how the quality of agri-produce is dynamic in nature</li> </ol>	Projector and Screen, White Board and Markers	15 mins
2.	Quality Parameters for Agricultural commodities	<ol style="list-style-type: none"> <li>1. Ask the participants to list down the major agricultural commodities in their villages and the corresponding quality parameters. Collate the list and note the parameters identified on the white board.</li> <li>2. Define and discuss the quality parameters as given in Section 3.2</li> </ol>	Projector and Screen, White Board and Markers	30 mins

3. Tools for Quality testing	<ol style="list-style-type: none"> <li>1. Group the participants into batches of 5 and share the set of tools with them.</li> <li>2. Discuss about the tools as given in Section 3.3.</li> </ol>	Tools for Quality Assaying	15 mins
4. Procedure for Quality testing of Cereals and pulses	Give the test samples of cereals/pulses to each of the groups as given in Section 3.4. Ensure that each participant is completing the testing of sample provided. Approximately 30 mins per participant	Tools for Quality Assaying, Test Samples	150 mins
5. Procedure for Quality testing of Oil seeds and Pulses	Give the test samples of cereals/pulses to each of the groups as given in Section 3.4. Ensure that each participant is completing the testing of sample provided. Approximately 30 mins per participant	Tools for Quality Assaying, Test Samples	150 mins



## TRAINING CONTENT

### 3.1. What is Quality?

Quality is defined as the degree to which a set of inherent characteristics fulfils requirements of the customer. There are two key aspects to quality;

**1. Requirements of the Customer** - The person/entity who plans to buy a product/service from the seller has a set of requirements which needs to be fulfilled by the seller.

**2. Inherent Characteristics of product/service** - The customer defines the requirements of the product/service in terms of certain parameters which represent the characteristics of the product/service.

Quality in case of agricultural commodities is defined in terms of multiple parameters like moisture, foreign matter, admixture etc. These parameters are explained in detail in the following section. The important feature of quality in case of agricultural commodities is that it is dynamic in nature, i.e., quality changes with time and also with exposure to external elements like air, water etc. Quality deterioration is a major risk to agricultural commodities during storage and attention is required to preserve the quality during storage.

### 3.2. What are quality parameters for agricultural commodities?

The common parameters used for defining quality of agricultural commodities are -

**1. Moisture Content** - It is the measure of water content in agricultural produce. It is defined as the weight of water contained in the crop expressed as a percentage of total weight of the crop.

$$\text{Moisture Content} = \frac{(\text{Weight of Moisture in Crop Sample})}{(\text{Weight of Wet Crop Sample})} \times 100$$

Higher moisture levels in harvested crops can lead to fungal infestations and thus affect the quality of the produce. High moisture content can also result in sprouting. Very low moisture levels will result in dry grains which will get damaged/shattered during storage or processing.

**2. Foreign Matter** - Foreign matter includes organic and inorganic matter other than that of the grain/oilseed under consideration. Husk, straws, weed seeds, other inedible grains, metallic pieces, sand, gravel, dirt, pebbles, stones, lumps of earth, clay, mud and animal filth are some examples of foreign matter in grains/oilseeds. Foreign matter increases moisture contents and promotes infestations.

**3. Weevilled grains** - Weevilled grains/seeds are grains/seeds that are partially or wholly bored by insects injurious to grains.

**4. Damaged grains** - Kernels or pieces of kernels that are sprouted or internally damaged as a result of heat, moisture, weather or microbes.

**5. Other Edible Grains**- Other Edible Grains are any edible grains (including oil seeds) other than the one which is under consideration;

**6. Admixture** - The presence of a variety of the same grain other than the variety in consideration. Presence of difference varieties will adversely affect the processing/cooking quality

**7. Immature/Shrivelled grains/seeds** - Grains/seeds that are not fully developed is classified as immature/shrivelled grains/seeds.

**8. Oil content** - Oil content is an important quality parameter for oilseeds like groundnut, soyabean etc. It is a measure of oil contained in the seed and is expressed in percentage terms.

### 3.3. What are the tools required for quality assaying?

The following are the tools and equipment required for manual assessment of physical quality parameters explained in the previous section.

1. Digital weighing balance with of 5 mg sensitivity.
2. Sieves for separating impurities - The following four IS Sieves of round holes shall be used
  - a. Top - 4.00 mm
  - b. Second from top - 3.35 mm
  - c. Third from top - 1.70 mm
  - d. Fourth from top - 1.00 mm

A solid bottom pan shall be used at the bottom of the sieve to collect impurities

3. Enamelled Plates - flat type, 30 cm in diameter with raised rims.
4. Small Scoop With handle, of mild steel, it may be in any of the following sizes:105 mm (L)\*100 mm (W) \*25mm (H), 75 mm (L)\*65 mm (W) \*25mm (H), 25 mm (L)\*20 mm (W) \*25mm (H)
5. Forceps - of about 10 cm length.
6. Magnifying Glass with a handle of about 7.5 cm length and having a magnification of 10 X.

7. Digital moisture meters which can measure moisture from 3.5% - 40% are employed for measuring moisture in cereals and oilseeds.

8. Oil content in case of oilseeds is measured in quality testing labs using Near Infrared Spectroscopy.



**DIGITAL MOISTURE METER**



**DIGITAL WEIGHING SCALE**



**TEST SIEVE**



**MAGNIFYING GLASS**

### 3.4. Procedure for Quality Assaying

Quality assaying of agricultural produce is carried out in three stages as shown below. Each of the stages are explained in the following sections.

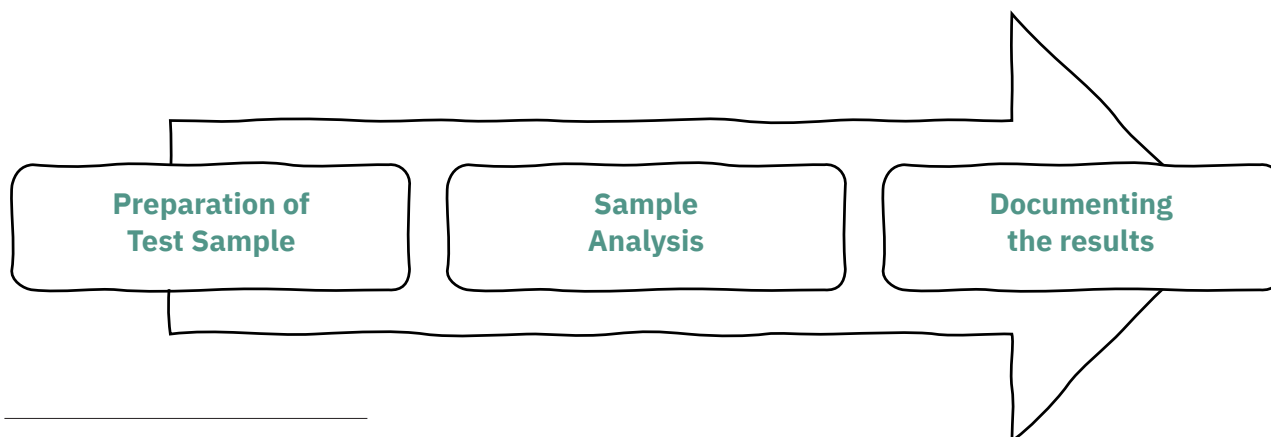


Fig 6.1 Steps in Quality assessment

#### 3.4.1. Preparation of Test Sample

##### 3.4.1.1. Cereals and Pulses

A sample is the aggregate of small portions of the grain/seed under consideration collected from different places and depths. It should be selected in such a way that it is representative of the lot under testing. The steps to be followed for preparing a test sample are given below.

1. The number of bags from which sample is taken should be decided based on the total number of bags using the table given below

Table 6.1 Sampling for Cereals and pulses

NO. OF BAGS	NO. OF BAGS FROM WHICH SAMPLE SHOULD BE TAKEN
10	Each bag
10 to 100	10, taken at random
More than 100	Square root of number of bags

2. From each bag, sample should be collected from three places – top, middle, and bottom using a conical sampler or a sack spear (parkhi). Around 250 g should be collected from each bag.

3. The composite sample shall be reduced to about 500 g by using coning and quartering technique. For this, aggregate and mix all the samples collected and place it on a non-absorbent surface in a conical heap. Flatten the top of the heap and divide it into quarters (4 sections). Remove two diagonally opposite sections and mix the other two sections. Repeat the entire process till a 500 g sample is obtained.

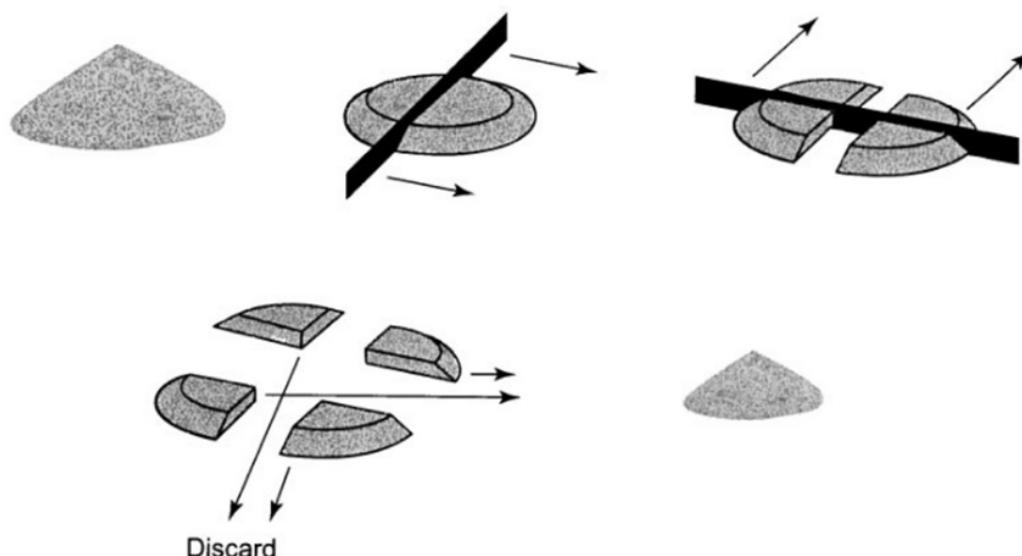


Fig 6.2. Coning and Quartering

### 3.4.1.2. Oilseeds

1. The number of bags from which sample is taken should be decided based on the total number of bags using the table given below

Table 6.2 Sampling for oil seeds

NO. OF BAGS	NO. OF BAGS FROM WHICH SAMPLE SHOULD BE TAKEN FOR SMALL SIZED OILSEEDS (SESAME, MUSTARD, RAPESEED, LINSEED ETC.)	NO. OF BAGS FROM WHICH SAMPLE SHOULD BE TAKEN FOR MEDIUM SIZED OILSEEDS (GROUNDNUT, SOYABEAN, CASTOR ETC.)
Up to 50	5	8
51 to 100	8	13
101-150	13	20
151-300	20	32
300 and above	32	50

2. From each bag, sample should be collected from three places – top, middle, and bottom using a conical sampler or a sack spear (parkhi). Around 500 g should be collected from each bag.

3. Mix the samples collected from different backs thoroughly and draw a representative sample of 500g for proceeding to sampling analysis

## 3.4.2. Sampling analysis

### 3.4.2.1. Cereal and Pulses

#### Visual Examination

The test sample should be visually examined to ensure that there are no severe infestations and it is in marketable condition. The odor should be tested to ensure that there is no pungency due to infestations.

#### Determination of Foreign Matter

The test sample prepared as explained in section 4.1 should be used for determination of foreign matter. For rice and millets, around 250 g of test sample is required and for other food grains 500 g of test sample is required. The exact weight of the sample should be noted before starting the examination.

Initially the sieve set has to be arranged in such a way that the largest perforations come at the top and the smaller ones come below that in the order of their sizes. The test sample should be placed on sieve set and agitated to ensure that the foreign particles are strained out at various levels. After straining thoroughly, it can be observed that the foreign matter will be distributed across different layers depending on the size of particles. At this stage, separate the sieves and pick up all foreign matter using hands or forceps from each of the sieves and keep it in a separate plate or pan.

Weigh the total foreign matter kept aside using the electronic weighing scale and estimate the percentage of foreign matter as a percentage of initial sample weight.

$$\text{Foreign Matter \%} = \frac{\text{Weight of Foreign Matter}}{\text{Weight of Sample}} \times 100$$

#### Testing for Weevilled grains

In order to test for weevilled grains in case of large grains, from the sieved sample which is free of foreign matter, measure and take 20 ml of grains using a measuring cup. Count the total number of grains in this 20 ml sample. From this, separate out the insect damaged/weevilled grains using a magnifying glass and forceps, and count the number of weevilled grains. The percentage of weevilled grains is then estimated as

$$\text{Weevilled Grains \%} = \frac{\text{No. of Weevilled grains in 20 ml sample}}{\text{Total number of grains in 20 ml sample}} \times 100$$

In case of smaller grains, where counting is difficult, take a sample weighing 20g, separate the weevilled grains and measure the weight of weevilled grains in a weighing balance with a sensitivity of 0.1mg. In such a scenario, the weevilled grain percentage can be estimated as given below

$$\text{Weevilled Grains \%} = \frac{\text{Weight of weevilled grains}}{\text{Weight of sample}} \times 100$$



## Testing for other refractions

In order to test for other refractions like other food grains, admixtures, damaged/discolored, brokens, shriveled or immature and so on, a portion of the sample free of foreign matter (after sieving as mentioned in section 4.2.1.2) should be used. To prepare this test sample, spread the post-sieving sample (only foreign matter removed) on a flat surface and take the required quantity from different sides and middle in small scoops and put it in a white-colored enameled plate. The weight of the sample to be used in this case is given in the table 6.3. Note the weight of the sample before proceeding.

Now using a magnifying glass and forceps, separate various refractions in the order given in the table 6.4. Ensure that each refraction is accounted only once and is kept separately. After all the refractions are separated, weigh the refractions individually and estimate it as percentage of the sample used. The formula for the same is given below.

$$\text{Refraction \%} = \frac{\text{Weight of Refraction}}{\text{Weight of Sample}} \times 100$$

Table 6.3 Weight of sample to test for other refractions

GRAIN	WEIGHT OF SAMPLE IN G (MIN)
Paddy	20
Wheat	50
Maize	50
Barley	50
Gram	50
Other pulses	25
Milletts	20

Table 6.4 Order of separating refractions

ORDER NO	TYPE OF REFRACTION
1	Other food grains
2	Damaged
3	Discoloured
4	Fragments
5	Brokens
6	Slightly damaged
7	Red grains
8	Kernels with husk
9	Shrivelled or Immature
10	Varietal Admixture

## Moisture Testing

Moisture testing can be carried out using the digital moisture meters.

### 3.4.2.2. Oil Seeds

Visually inspect the sample to ensure that it is free of any infestations. Test the odor of the sample to ensure that it is free from obnoxious smells.

The physical examination of the sample should be carried out based by following the steps mentioned below.

1. Take a sample of 500g of the oil seed under consideration. Note the exact weight of the sample before proceeding with testing.
2. Sieve the sample through a 1mm sieve. Collect the dust passing through the sieve. Use a magnifying glass and forceps to separate out other foreign matter from the sample. Weigh the foreign matter and dust together to estimate the % of foreign matter in the sample using the formula given below

$$\text{Foreign Matter \%} = \frac{\text{Weight of Foreign Matter}}{\text{Weight of Sample}} \times 100$$

3. Continue with the above sample. Separate the specified seeds by hand-picking and visual examination and report as follows -

- a. Damaged and weevilled seeds or kernels, percent by weight,
  - b. Weevilled seeds or kernels, percent by weight,
  - c. Shriveled and immature seeds or kernels, percent by weight,
  - d. Seeds of other varieties, percent by weight.
4. Moisture testing can be carried out using the digital moisture meters.

### 3.4.3. Documentation

The test results can be captured in the format given in the table below. A copy of the same may be shared with farmer for his/her reference.

Table 6.5 Template for documenting Quality test results

<b>Date of inspection</b>	
<b>Name of Farmer</b>	
<b>Address of Farmer</b>	
<b>Crop Name</b>	
<b>Variety Name</b>	
<b>Total Quantity</b>	
<b>Moisture %</b>	
<b>Foreign Matter %</b>	
<b>Damaged %</b>	
<b>Weevilled %</b>	
<b>Admixture %</b>	
<b>Name and Signature of person who carried out the inspection</b>	

### 3.5. Grades for key crops

The grades for a crop are defined based on the values of different quality parameters explained earlier. In trades between buyers and FPO, usually buyers will define the values of quality parameters as per their requirement and they will vary from buyer to buyer. The following sections explain the grades of various crops as defined by e-NAM, which is an online agricultural commodity trading platform

#### 3.5.1. Whole Pulses - Arhar, Moong, Masoor, and Urad

The produce in general should be

1. Clean, wholesome, reasonably uniform in size, shape and color characteristic to the variety.
2. Free from obnoxious smell and fungus infestation.

The quality parameters based on for different quality ranges are given in the table below. The recommended sample size for estimation of quality parameters is 250g.

Table 6.6. Quality parameters and grades for pulses

S.NO.	QUALITY PARAMETERS	RANGE-1	RANGE-2	RANGE-3
1	Moisture (% by weight) Max	10.0	12.0	14.0
2	Foreign matter (% by weight) Max	1.0	1.5	2.0
3	Other edible grains (% by weight) Max	1.0	2.0	3.0
4	Damaged/Discoloured grains (% by weight) Max	2.5	3.5	5.0
5	Weevilled Grains (% by count) Max	3.0	5.0	10.0
6	Admixture (% by weight) Max	1.0	2.0	3.0
7	Immature & Shrivelled grains (% by weight) Max	1.0	2.0	3.0



### 3.5.2. Bengal Gram (Chana – Whole)

The produce in general should be

1. Clean, wholesome, reasonably uniform in size, shape and color characteristic to the variety.
2. Free from obnoxious smell and fungus infestation.

The quality parameters based on for different quality ranges are given in the table below. The recommended sample size for estimation of quality parameters is 500g.

Table 6.7 Quality parameters and grades for bengal gram

S.NO.	QUALITY PARAMETERS	RANGE-1	RANGE-2	RANGE-3
1	Moisture (% by Weight) Max	10.0	12.0	14.0
2	Foreign matter (% by Weight) Max	1.0	2.0	3.0
3	Admixture/Other edible grains (% by Weight) Max	2.0	3.0	4.0
4	Damaged/ immature & Shrivelled grains (% by Weight) Max	4.0	5.0	7.0
5	Weevilled Grains (% by count) Max	3.0	6.0	10.0



### 3.5.3. Wheat

The produce in general should be

1. Clean, wholesome, reasonably uniform in size, shape and color characteristic to the variety.
2. Free from obnoxious smell and fungus infestation.

The quality parameters based on for different quality ranges are given in the table below. The recommended sample size for estimation of quality parameters is 500g.

Table 6.8 Quality parameters and grades for Wheat

S.NO.	QUALITY PARAMETERS	RANGE-1	RANGE-2	RANGE-3
1	Moisture (% by Weight) Max	11.0	12.0	14.0
2	Foreign matter (% by Weight) Max	1.5	3.0	4.0
3	Admixture/Other edible grains (% by Weight) Max	5.0	7.0	10.0
4	Immature & Shrivelled Grains (% by Weight) Max	3.0	5.0	7.0
5	Damaged/Discoloured grains (% by Weight) Max	3.0	5.0	7.0
6	Weevilled Grains (% by count) Max	4.0	6.0	10.0

One important optional parameter for grading of wheat is Hectoliter mass. It is defined as the weight of 100 liters of wheat. It shouldn't be less than 70kg.



### 3.5.4. Paddy

The produce in general should be

1. Clean, wholesome, reasonably uniform in size, shape and color characteristic to the variety.
2. Free from obnoxious smell and fungus infestation.

The quality parameters based on for different quality ranges are given in the table below. The recommended sample size for estimation of quality parameters is 500g.

Table 6.8 Quality parameters and grades for Paddy

S.NO.	QUALITY PARAMETERS	RANGE-1	RANGE-2	RANGE-3
1	Moisture (% by Weight) Max	17.0	18.0	20.0
2	Admixture (% by Weight) Max	10.0	15.0	20.0
3	Immature & Shrivelled grains (% by Weight) Max	3.0	5.0	7.0
4	Foreign matter (% by Weight) Max	2.0	4.0	6.0
5	Damaged/Discoloured grains & Weevilled Grains (% by Weight) Max	4.0	6.0	8.0



### 3.5.5. Maize

The produce in general should be

1. Clean, wholesome, reasonably uniform in size, shape and color characteristic to the variety.
2. Free from obnoxious smell and fungus infestation.

The quality parameters based on for different quality ranges are given in the table below. The recommended sample size for estimation of quality parameters is 500g.

Table 6.9 Quality parameters and grades for Maize

S.NO.	QUALITY PARAMETERS	RANGE-1	RANGE-2	RANGE-3
1	Moisture (% by Weight) Max	12.0	14.0	16.0
2	Foreign matter (% by Weight) Max	1.5	2.0	3.0
3	Admixture/Other edible grains (% by Weight) Max	1.0	2.0	3.0
4	Damaged/ immature & Shrivelled grains (% by Weight) Max	7.0	10.0	15.0
5	Weevilled Grains (% by count) Max	4.0	6.0	10.0



### 3.5.6. Jowar

The produce in general should be

1. Clean, wholesome, reasonably uniform in size, shape and color characteristic to the variety.

2. Free from obnoxious smell and fungus infestation.

The quality parameters based on for different quality ranges are given in the table below. The recommended sample size for estimation of quality parameters is 500g.

Table 6.10 Quality parameters and grades for Jowar

S.NO.	QUALITY PARAMETERS	RANGE-1	RANGE-2	RANGE-3
1	Moisture (% by Weight) Max	12.0	14.0	16.0
2	Admixture (% by Weight) Max	1.0	2.0	3.0
3	Immature & Shrivelled grains (% by Weight) Max	4.0	6.0	8.0
4	Foreign matter (% by Weight) Max	0.1	0.6	1.0
5	Other edible grains (% by Weight) Max	3.0	4.0	6.0
6	Damaged/Discoloured grains (% by Weight) Max	5.0	7.0	10.0
7	Weevilled Grains (% by count) Max	2.0	4.0	6.0





### 3.5.7. Bajra

Bajra in general should be

1. Clean, wholesome, reasonably uniform in size, shape and color characteristic to the variety.

2. Free from obnoxious smell and fungus infestation.

The quality parameters based on for different quality ranges are given in the table below.

Table 6.11 Quality parameters and grades for Bajra

S.NO.	QUALITY PARAMETERS	RANGE-1	RANGE-2	RANGE-3
1	Moisture (% by Weight) Max	12.0	14.0	16.0
2	Admixture (% by Weight) Max	1.0	2.0	3.0
3	Immature & Shrivelled grains (% by Weight) Max	4.0	6.0	8.0
4	Foreign matter (% by Weight) Max	0.1	0.6	1.0
5	Other edible grains (% by Weight) Max	3.0	4.0	6.0
6	Damaged/Discoloured grains (% by Weight) Max	5.0	7.0	10.0
7	Weevilled Grains (% by count) Max	2.0	4.0	6.0



### 3.5.8. Groundnut Pods

Groundnut pods in general should be

1. Clean, wholesome, reasonably uniform in size, shape and color characteristic to the variety.
2. Free from obnoxious smell and fungus infestation.

The quality parameters based on for different quality ranges are given in the table below.

Table 6.12 Quality parameters and grades for Groundnut Pods

S.NO.	QUALITY PARAMETERS	RANGE-1	RANGE-2	RANGE-3
<b>A</b>	<b>Essential</b>			
1	Moisture (% by Weight) Max	8.0	10.0	12.0
2	Foreign matter (% by Weight)	1.0	2.0	3.0
3	Damaged pods (% by Weight)	2.0	3.0	5.0
4	Pods of other varieties (% by Weight)	3.0	5.0	7.0

One key optional parameter for groundnut is that the weight of peanuts obtained by deshelling should not be less than 62% of the weight of groundnut pods from which they were derived.



### 3.5.9. Peanuts

Peanuts in general should be

1. Intact, firm, clean, reasonably uniform size & shape, color characteristics to the variety
2. Free from visible foreign matter, abnormal external moisture, foreign smell, smoke, burn

The quality parameters based on for different quality ranges are given in the table below.

Table 6.13 Quality parameters and grades for Peanuts

S.NO.	QUALITY PARAMETERS	RANGE-1	RANGE-2	RANGE-3
1	Moisture (% by Weight) Max	5.0	6.0	7.0
2	Damaged kernel including slightly damaged, discoloured kernel (% by Weight) Max	3.0	4.0	5.0
3	Immature & Shrivelled (% by Weight) Max	2.0	3.0	4.0
4	Foreign matter (% by Weight) Max	0.5	1.0	2.0



### 3.5.10. Soyabean

Soyabean shall be

1. Clean, wholesome, reasonably uniform in size, shape and color characteristic to the variety.
2. Free from obnoxious smell and fungus infestation.

Table 6.14 Quality parameters and grades for Soyabean

S.NO.	TRADABLE PARAMETERS	RANGE-1	RANGE-2	RANGE-3
1	Oil content (% by Weight) Min	20.0	18.0	13.0
2	Moisture (% by Weight) Max	7.0	9.0	12.0
3	Foreign matter (% by Weight) Max	1.5	2.0	3.0
4	Damaged seeds (% by Weight) Max	3.0	5.0	7.0
5	Other edible seeds (% by Weight) Max	1.0	3.0	6.0
6	Weevilled Seeds (% by count) Max	3.0	4.0	5.0



### 3.5.11. Sesamum

Sesamum in general should be

1. Clean, wholesome, reasonably uniform in size, shape and color characteristic to the variety.
2. Free from obnoxious smell and fungus infestation.

The quality parameters based on for different quality ranges are given in the table below.

Table 6.15 Quality parameters and grades for Sesamum

S.NO.	QUALITY PARAMETERS	RANGE-1	RANGE-2	RANGE-3
1	Oil Content (% by Weight) Min	45.0	40.0	35.0
2	Moisture (% by Weight) Max	5.0	6.0	7.0
3	Foreign matter (% by Weight) Max	1.0	1.5	2.0
4	Damaged seeds (% by Weight) Max	1.0	2.0	3.0
5	Admixture of other varieties (%by Weight) Max	10.0	15.0	20.0



### 3.5.12. Castor Seed

Castor seed in general shall be

1. Clean, wholesome, reasonably uniform in size, shape and color characteristic to the variety
2. Free from abnormal flavors, obnoxious smell and fungus infestation

The quality parameters based on for different quality ranges are given in the table below.

Table 6.16 Quality parameters and grades for Castor Seed

S.NO.	QUALITY PARAMETERS	RANGE-1	RANGE-2	RANGE-3
1	Oil Content (% by Weight) Min	47.0	45.0	40.0
2	Foreign matter (% by Weight) Max	1.5	2.5	3.5
3	Damaged and discoloured seeds (% by Weight) Max	4.0	6.0	7.0
4	Broken Seeds (% by Weight) Max	1.0	2.0	3.0
5	Moisture (% by Weight) Max	5.0	6.0	7.0



### 3.5.13. Cotton

Cotton shall be

1. Wholesome, clean, dried; and
2. Free from insect & fungus infestation, mould growth, rodent hair and excreta.

Table 6.17 Quality parameters and grades for Cotton

S.NO.	TRADABLE PARAMETERS	RANGE-1	RANGE-2	RANGE-3
1	Staple Length	Extra long	Above 32.5	
		Long Staple	Above 27.5 to 32.5	
		Medium Long Staple	Above 25.0 to 27.5	
		Medium Staple	20.5 - 25.0	
		Short Staple	Below 20.5	
2	Trash (% by Wt) Max	3	5	7
3	Bundle Strength (Gm/tex) (mm)	Above 28.0	26.0 -28.0	24.0-26.0
4	Micronaire	2.8 to 3.0	3.0 - 3.5	3.5 - 4.0
5	Moisture	Not more than 10		

All the parameters for cotton, except moisture can be tested in laboratories only. Traders usually buy cotton from farmers based on moisture content and approximate staple length.



## ACTIVITIES

1. List down the major agricultural commodities cultivated in your village and the corresponding quality parameters.
2. Undertake testing of the sample of cereals/pulses provided and note down the quality report in the format provided in Section 3.4.3
3. Undertake testing of the sample of oilseeds provided and note down the quality report in the format provided in Section 3.4.3

## REFERENCES

Training Study Manual on Quality Control, Published by Institute of Food Security, FCI, Gurugram, 2020-21

Method of Analysis for Food Grains (IS 4333, (1996, Re-affirmed in 2012))

Cereals and pulses and milled products - sampling of static batches (IS: 14818 (2000))

Methods for sampling of oilseeds (IS: 4115 (1967, Re-affirmed in 2000))

Methods of test for oilseeds (IS: 3579 (1966, Re-affirmed in 2000))

Terminology for foodgrains (IS: 2813 (1995, Re-affirmed in 2010))

<https://enam.gov.in/web/commodity/commodity-quality>



# 7

## INTRODUCTION TO AGRICULTURAL MARKETING AND WAREHOUSING IN INDIA



# CHAPTER SUMMARY



## OBJECTIVES

- To understand the concept of warehousing
- To understand various activities involved in warehousing
- To understand good practices to be followed in warehouse management

## TIME

8.5  
hrs

The session can be organized in an actual warehouse. In case the same cannot be organized, a field visit/virtual tour of warehouse can be organized and session can be taken up in the class-room setting. The time required for this chapter is 510 mins (8.5 hrs) including the time for warehouse visit.

## REQUIRED MATERIALS



Projector and Screen, White Board, Markers, PPT Slides



## GUIDELINES FOR INSTRUCTORS

S.N	TRAINING CONTENT	INSTRUCTOR ACTION	MATERIAL	TIME
1.	Field Visit to nearest APMC yard	Organize a physical visit to a nearby APMC yard. During the field visit/virtual tour explain the various process involved in the Mandi, facilities available and charges involved for the farmers as well as the buyers.	Field visit to APMC yard	180 mins
2.	Introduction to APMC system	Explain the APMC system, its objectives, the issue plaguing the system, and proposed solutions as described in Section 3.1.	Projector and Screen	60 mins
3.	Field visit/ Virtual tour of warehouses	Organize a physical visit to a nearby warehouse or a virtual tour. During the field visit/ virtual tour explain the various activities involved in managing warehouses, characteristics of ideal warehouse, dunnage and stacking, and cleaning practices.	Field Visit to warehouse.	180 mins
4.	Introduction to Warehouses and Warehousing	Explain the key elements of a warehouse and activities involved in warehousing (Section 3.2) by connecting it to the field visit/virtual tour of the warehouse.	Projector and Screen	20 mins

5. Need for warehousing	<ol style="list-style-type: none"> <li>1. Ask the participants to identify reasons on why a farmer/ trader/processor or FPO would need a warehouse.</li> <li>2. Explain the need for warehousing as given in Section 3.3</li> </ol>	White board/ Markers	15 mins
6. Types of warehouses	Explain the various types of warehouses as given in section 3.4.	Projector and Screen, PPT Slides	10 mins
7. Storage of Goods	<ol style="list-style-type: none"> <li>1. This section should be clearly explained during the warehouse visit/ virtual tour.</li> <li>2. Explain the content in Section 3.5 to refresh the memory of the participants.</li> </ol>	Projector and Screen, PPT Slides	15 mins
8. Best practices in Warehouses	<ol style="list-style-type: none"> <li>1. Explain the care to be taken while unloading sacks as given in Section 3.6.1</li> <li>2. Explain the cleaning practices to be ensured while operating storage centers as given in Section 3.6.2</li> </ol>	Projector and Screen, PPT Slides	15 mins
9. Essential Commodities Act	Give a brief about the Essential commodities act and how it prevents investment in warehouses as given in Section 3.7		15 mins



## TRAINING CONTENT

### 3.1. Introduction to Agricultural Produce Marketing Committee (APMC)

Agricultural Produce Marketing Committees are marketing boards established by State Governments in India with the objective of regulating the purchase and sale of any specific kind of agricultural commodities in market areas defined by the State Governments under their respective APMC acts. Agricultural Produce Market Committee (APMC) Yard / Mandi is a place in the market area managed by a Market Committee, with required infrastructure for facilitating transactions of agricultural commodities such as cleaning and grading facilities, drying yards, weighing facilities, and storage space.

#### 3.1.1. Objectives of APMC

A network of physical markets regulated by market committees was created with the following objectives.

1. Ensure fair price discovery for farmers through unobstructed play of supply and demand forces.
2. Provide necessary facilities and infrastructure to facilitate transactions
3. Regulate market practices such as weighing, grading etc and prevent malpractices
4. Ensure transparency in transactions.

5. Promote competition
6. Ensure timely payment to farmers

### 3.1.2. Issues in current APMC System

In spite of the good objectives with which the APMC system was put in place, it is plagued by the following constraints.

1. Licensing requirements in APMC mandis resulted in monopoly of few traders who prevent new players from entering the markets and thus reducing competition and preventing fair price discovery.

2. Market Committees charge user fees and transaction fees as a percentage of transaction value from buyers/traders on the sale of notified agricultural produce. In addition to these, other charges, such as, various types of development cess, entry tax, purchase tax, weighing charges and hamal charges, etc are also required to be paid resulting in to higher transaction cost and lower price realization by the farmers in a regulated market. A copy of APMC receipt issued by Ralegaon Mandi in Maharashtra is shown below. It shows the various charges levied by the Mandi from the farmer including

Fig 7.1 Sample mandi receipt

brokerage for commission agents, loading/unloading charges, weighing charges and other charges. The user fee and transaction fee are charged on the buyers and hence the same is not reflected in the APMC receipt which is issued to the seller.

3. The all-India average area served by a regulated market is 487.40 sq. km as against the recommended area of 5 sq.km (by National Commission on Farmers, 2004). This shows that the present APMC system has failed in creating sufficient number of markets to handle the marketable surplus and thus preventing easy access of markets to farmers

4. Existing mandis lack many of the required infrastructure. Covered and open platforms for auctioning exist in 66% of the existing markets, while only 25% of the markets have drying yards. Similarly electronic weighing bridges are also available in very few markets.

5. Licensing requirements and monopolization of APMC yards by few traders have increased the number of intermediaries between farmers and processors/customers. Longer supply chains result in increased costs and margin requirements which translate to lower returns for farmers.

### 3.1.3. Possible Solutions to address constraints of APMC system

Ministry of Agriculture (GoI) has identified following 7 vital areas of market reforms to pursue with the States/Union Territories.




- Direct wholesale purchase from farmers outside the market yards at farmgate by Processors/ Exporters/ Bulk Retailers/ End user, etc;
- Establishment of private market yards / private markets managed by a person other than a Market Committee;

- Establishment of farmer / consumer market by a person other than Market Committee (Direct Sale by the producer to the consumers);
- Provision for Contract Farming;
- Provision for unified single registration / license for trade transaction in the mandis across the State;
- Provision for e- trading;
- and Provision for single point levy of market fee at first transaction.

### 3.2. Introduction to Warehouses and Warehousing

Storage and safekeeping of the produce procured from farmers till it is dispatched to the buyer is one of the key functions of procurement centre manager. In order to carry out this function effectively, the Procurement centre manager should have basic knowledge of good storage practices to be adopted.

**A warehouse is building or other enclosed space with adequate storage and working space, skilled manpower as well equipment that will protect the stored commodity from harmful environmental conditions. Thus, the three key elements of warehousing are**

	<b>a. Space</b> - Physical space where the commodities/goods can be safely stored.
	<b>b. People</b> - Skilled manpower to ensure that the activities involved in warehousing are efficiently carried out.
	<b>c. Equipment</b> - All hardware required for operating the warehouses – forklifts, racks, pallets, tools for quality testing etc.

**Warehousing** is the set of activities involving storage of commodities on a large scale in a systematic and orderly manner and making it available when there is a need for the stored commodities. The various activities involved in warehousing are



Fig 7.2. Activities involved in Warehousing

The activities are briefly explained below

### 3.2.1. Material receiving and incoming inspection

This activity occurs during the unloading of inbound vehicles and includes the visual inspection of delivered packages to ensure that products were not damaged during transport. It is also important during this activity that staff verify the quantities of products received against the packing slip or shipping invoice and report any discrepancies. The key aspects to be monitored in this activity is mentioned in Section 5 of this chapter.

### 3.2.2. Put away (Storage)

This process includes moving products from receiving area, after they are released for storage; and assigning them to their designated storage area. It is important to maintain proper records related to storage of goods. The processes involved in storage are explained in Section 6 of this chapter. The details of records to be maintained in given in Chapter 7.

### 3.2.3. Protection of goods

It is the responsibility of the warehouse in-charge to ensure safe upkeep of the commodities stored in the warehouse. Sections 3 and 7 explain the practices that should be adopted to ensure that the goods are stored safely.

### 3.2.4. Order fulfilment (Packing and Shipping)

In this stage, the stocks are transported from the warehouse to the location defined by the buyer after completing required documentation.

## 3.3. Need for warehousing

Warehousing is necessary for the following reasons

- 1. Seasonal Production** - When the production of a commodity is seasonal, while its demand is spread over the year, warehousing is necessary. For example, paddy is cultivated once in a year, but production of rice and consumption of rice is spread throughout the year. In such a case, processors might buy the paddy in bulk and store it for processing.
- 2. Seasonal Demand** - The demand for certain goods is seasonal, and producers will produce the good in advance and store it for supplying when demand arise. E.g., woolen wear, umbrellas.
- 3. Large Scale Production** - In most cases large scale production is efficient and manufacturers prefer to produce and store the goods for future supply. E.g., rice, dals etc.
- 4. Price Stabilization** - Sometimes excess supply of commodities/goods in market can cause the price to crash. In order to prevent that from happening producers of goods/commodities choose to store the produce and release it in market gradually over time. Farmers usually face this problem during the months immediately following the harvest, when prices drop due to sudden glut in the market.

## 3.4. Types of warehouses

Formal warehouses are usually large buildings specially designed and constructed for storage. Such

storage houses are generally used by large businesses (big traders, companies or exporters). Their storage capacity can range from a few hundred tons to thousands of tons. These are mainly built on the side of the road so that the movement of big and heavy vehicles can be done without any hindrance. Construction of formal warehouses will require large amounts of space, capital and time and require skilled manpower to manage operations.



Fig 7.3 Formal Warehouse

Informal warehouses are not originally constructed for storage but are used as godowns by making some changes as per the requirement. Informal structures are small in size and their storage capacity can range from a few quintals to a few tons. They are commonly used by small businesses (such as small traders, producer companies, producer groups, cooperative organizations or farmers).



Fig 7.4 Informal Warehouse

Formal warehouses can be further classified as given below

- 1. Private Warehouses** - The warehouses which are owned and managed by the manufacturers or traders to store, exclusively, their own stock is known as private warehouses.
- 2. Public Warehouses** - The warehouses which are run to store goods of the general public are known as public warehouses. Anyone can store his goods in these warehouses on payment basis.

**3. Government Warehouses** - These warehouses are owned, managed and controlled by central or state governments or public corporations or local authorities. Both government and private enterprises may use these warehouses to store their goods. Central Warehousing Corporation of India, State Warehousing Corporation and Food Corporation of India are examples of agencies maintaining government warehouses.

**4. Bonded Warehouses** - Bonded warehouses are used to store imported goods for which import duty is yet to be paid. The importers are not allowed to take away the goods from the ports till such duty is paid. These warehouses are owned, managed and controlled by government as well as private agencies. Private bonded warehouses have to obtain license from the government.

### 3.5. Storage of goods – Dunnage and Stacking

#### 3.5.1. Preparing Stacking plan

**A stacking plan should be prepared by keeping in mind the following two aspects**

1. Use space efficiently
2. Promote the efficient handling of commodities

**The following are the some of the thumb rules while preparing a stacking plan**

1. Maintain a space of 3.3 ft between the walls and stacks
2. 2.5 ft alleyways around the stacks
3. 4 ft haulage at doorway for moving the stacks
4. Divide the floor area into uniform stack spaces (rectangular or square) and mark them clearly with a 2-inch-wide line in white or black paint.

#### 3.5.2. Dunnage

A dunnage is usually a platform structure located between the sacks and the floor of the warehouse. Its main purpose is to protect the goods/sacks from moisture and pests coming from the warehouse floor. The more efficiently the dunnage is done, the more easily the sacks can be installed. Dunnage can be made from a variety of materials, such as logs, ply boards, tarpaulins, foam, etc.

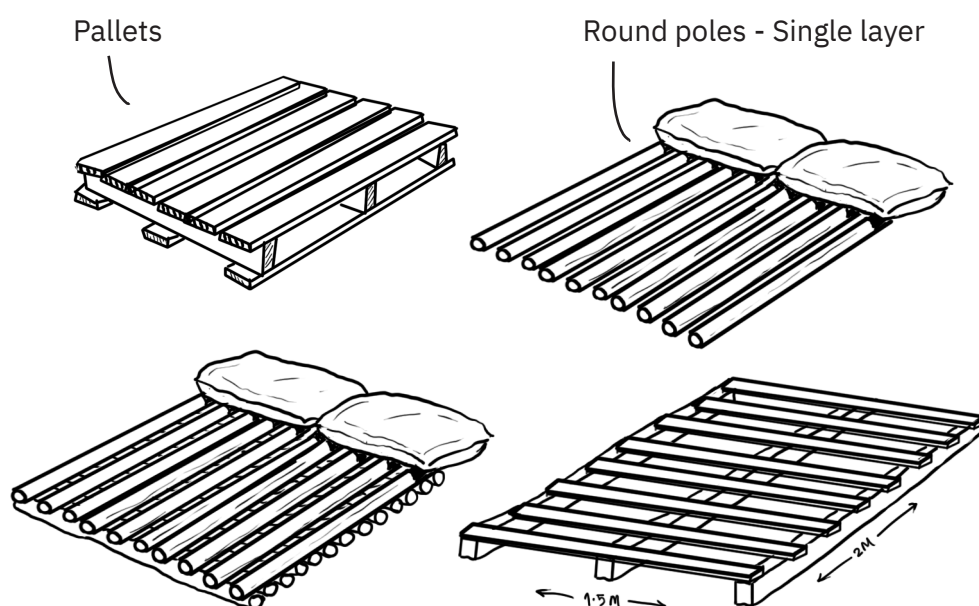


Fig 7.5 Dunnage for stacking



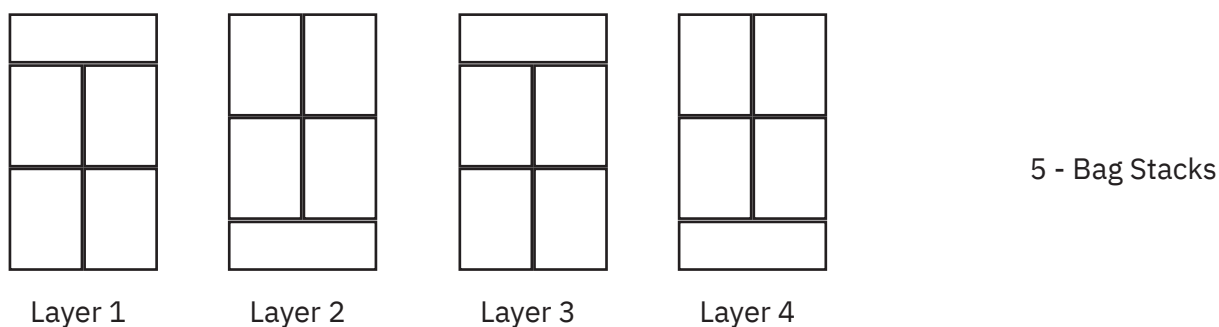
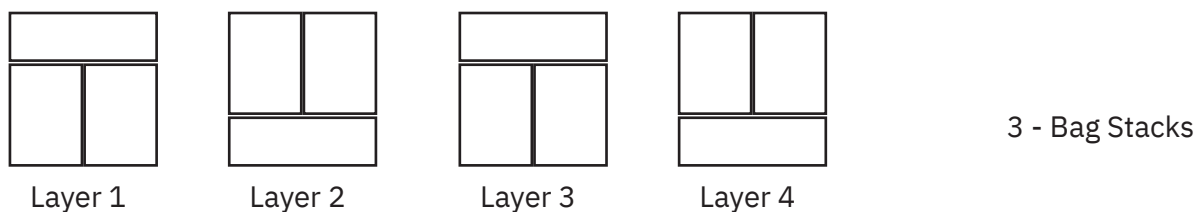
The most effective and popular method of preparing dunnage is lay one layer of wooden poles and then to lay a second layer at right angles over the first layer and then cover them with a tarpaulin. However, due to lack of resources, paddy husk, groundnut shells, thermocol etc. can also be used as dunnage.

### 3.5.3. Stacking

After preparing the dunnage, the next work is of stacking. In the process of stacking, bags of goods are stacked on top of each other. Prior to stacking it should be ensured that floor is cleaned. The stack height shouldn't be more than the height of the side walls and there should be a minimum distance of 1m between the top of the stack and the roof of warehouse. While preparing stacks, it should be ensured that each stack correspond to a particular variety of crop with same quality specifications. Mixing bags with different varieties/crops/quality specification in the same stack can create problems during the order fulfilment phase.

In order to prevent sacks slipping and falling, they are placed in an interlocking pattern to create bonded stacks. The method for arranging bonded stacks is shown below

1. Bags where length and breadth are in the proportion 2:1



2. Bags where length and breadth are in the proportion 3:2

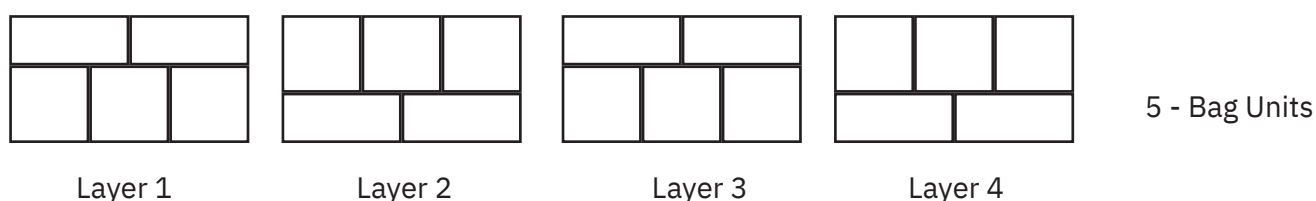


Fig 7.6 Stacking plan for various bag sizes

### 3.5.3.1. Stock Register

A stock register should be maintained at the procurement centre warehouses to track inward and outward movement of stocks. The format for the same is given below. The stock of each commodity should be tracked in separate sheets. If stocks of same commodity belonging to different grades are stored, then the same should also be captured in separate sheets.

<b>STOCK REGISTER</b>									
Commodity - _____									
Quality Grade - _____									
SL. NO.	DATE	VEHICLE NO	NAME OF BUYER/SELLER	INWARD		OUTWARD		CLOSING	
				NO. OF BAGS	WEIGHT (IN QTLS)	NO. OF BAGS	WEIGHT (IN QTLS)	NO. OF BAGS	WEIGHT (IN QTLS)

Fig 7.7 Stock register template for procurement center

### 3.6. Best Practices in warehousing

#### 3.6.1. Monitoring while unloading

Precautions need to be taken while unloading the goods from the vehicles to store them in the warehouse. Carelessness while unloading can result in wastage of produce. Therefore, it is necessary that the workers should be given proper guidelines unloading and they should be monitored during the whole process. The following points should be kept in mind while moving the goods to/from the warehouses.

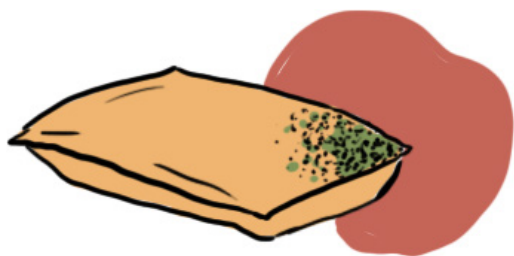
1. Proper handling is needed to avoid transportation losses and spillage



2. Don't throw or drop, this will split any package, especially paper bags



3. Don't unload in the rain, wetting weakens paper bags and cartons



4. If flour or grain is wet, it becomes moldy or even grain might germinate

Fig 7.8 Precautions while unloading sacks

1. Ensure that the total number of bags or total quantity unloaded is tallying with the quantity procured from farmers.
2. Weigh the bags randomly at the time of unloading. This will help in verifying the weight of the incoming goods.
3. In case the produce is brought by farmers to the procurement centre, do the quality testing of the produce before storing it in the warehouse.
4. While unloading, care should be taken that the workers do not throw the bags from a distance as this can cause sacks to tear open and cause spilling.
5. If any sack is torn, then it should be stitched properly before stacking.
6. As far as possible, unloading of bags should be avoided in the rain. The sacks can become wet due to contact with water and this increases the risk of spoilage or germination of grains stored in them.

### 3.6.2. Cleaning of warehouses

Cleanliness of warehouse and its surroundings should be always maintained. The following steps should be taken to cleanliness and hygiene of warehouses.

1. The floor space of warehouse should be cleaned daily
2. The stacks (foodgrains bags) should be brushed at weekly intervals.
3. The walls of the warehouse shall be brushed at weekly intervals
4. Clean the corners of walls/floor thoroughly
5. Always dispose the sweepings away from the warehouse
6. The waste material and dead stock items including used old gunny bags, wooden crates, polythene sheets etc. should not be stored in warehouse. These should be stored in separate rooms.
7. Rodent control operations in and around warehouses should also be carried out as and when required and dead rats should be collected and buried in the earth.
8. Vegetative growth, if any, should be removed at periodical intervals to keep the premises free from birds, reptiles, rat burrows etc.
9. Cracks and crevices, if found, should be immediately repaired.

The following practices should be avoided while managing warehouses

- 1. Throwing of garbage in the warehouse premises** - Throwing of garbage in the warehouse premises will increase the filth due to which the mosquitoes, flies etc. will start increasing.
- 2. Improper handling of bags** - Waste bags should be disposed of properly. Avoid throwing them everywhere.
- 3. Incorrect handling of fumigant pouches** - If the fumigant pouch is not handled properly, the chemicals in it can spread around. Animals or cattle can also become ill by coming in contact with it.
- 4. Bird nests and spider webs in the warehouse premises** - This can lead to infestations and damage the produce kept in the warehouse.
- 5. Dirt in the sample test area** - Due to the contamination of the sample test area, there may be discrepancies in the quality test.

### 3.7. Essential Commodities Act

The Essential Commodities Act, 1955 empowers the central government to designate certain commodities (such as food items, fertilizers, and petroleum products) as essential commodities. The central government may regulate or prohibit the production, supply, distribution, trade, and commerce of such essential commodities. This was introduced with the objective of preventing hoarding of commodities and keeping prices under control, especially in 1970s and 1980s when India was a net importer of food grains.

The essential commodities act disincentivizes traders from storing commodities due to fear of government crackdown. This leads to a reduction the demand for warehouses and other storage infrastructure, discouraging private investment in developing storage infrastructure.

## REFERENCES

JSI Supply Chain Manager's Handbook

Warehousing (Unit 4), International Marketing and Logistics System, IGNOU



08

## FINANCE FOR SOURCING MANAGERS



# CHAPTER SUMMARY



## OBJECTIVES

- To understand key concepts in finance
- To understand estimation of working capital required to manage procurement centre
- To understand Income statement and use the same to estimate prices
- To understand basic financial statements.

## TIME



7 hrs

## REQUIRED MATERIALS



Projector and Screen, White Board, Markers, PPT Slides



# GUIDELINES FOR INSTRUCTORS

S.N	TRAINING CONTENT	INSTRUCTOR ACTION	MATERIAL	TIME
1.	Expenses and Revenue	<ol style="list-style-type: none"> <li>1. Explain the concept of expenses and different types of expenses. (Section 3.1.1)</li> <li>2. Ask the participants to enumerate various expenses associated with procurement centres.</li> <li>3. Explain the concept of revenue (Section 3.1.2) and ask participants to enumerate various types of revenue sources of procurement centre</li> </ol>	Projector and Screen, Whiteboard, PPT Slides	30 mins
2.	Fixed Capital	<ol style="list-style-type: none"> <li>1. Explain the definition of fixed capital (Section 3.1.3.1)</li> <li>2. Ask the participants to enumerate different types of assets that are needed for procurement centre and the approximate investment required.</li> </ol>	Projector and Screen, Slides	30 mins
3.	Working Capital	<ol style="list-style-type: none"> <li>1. Explain the concept of working capital and operating cycle (Section 3.1.3.2)</li> <li>2. With the help of Sample calculation given, explain the estimation of working capital.</li> <li>3. Ask the participants to solve practice problem 1 given in Section 3.3.</li> <li>4. Explain the thumb rules for working capital management by relating it to practice problem 1.</li> <li>5. Summarize the step involved in estimating of working capital using the infographic given in Section 3.1.3.2</li> </ol>	Projector and Screen, PPT Slides, White Board and Marker	120 mins



4. Income Statement	<ol style="list-style-type: none"> <li>1. Explain the concept of income and structure of income statement as given in 3.2.</li> <li>2. Facilitate the participants to solve practice problems 2,3, and 4 given in Section 3.3.</li> </ol>	Projector and Screen, PPT Slides, White board and marker	120 mins
5. Balance Sheet	<ol style="list-style-type: none"> <li>1. Explain the concept of income and structure of income statement as given in 3.3</li> <li>2. Facilitate the participants to solve practice problem 5 given in Section 3.3.</li> </ol>	Projector and Screen, PPT Slides, White board and marker	60 mins
6. Cash Flow Statement	<ol style="list-style-type: none"> <li>1. Explain the concept of income and structure of income statement as given in 3.3</li> <li>2. Facilitate the participants to solve practice problem 5 given in Section 3.3.</li> </ol>	Projector and Screen, PPT Slides, White board and marker	60 mins



## TRAINING CONTENT

### 3.1. Introduction to basic terms of Finance

#### 3.1.1. Expenses

**Expenses is the money spent or cost incurred in an enterprise's efforts to generate revenue, and represents the cost of doing business.** Cost is measurement in monetary terms of the amount of resources used for the purpose of production of goods or rendering services. From the definition;

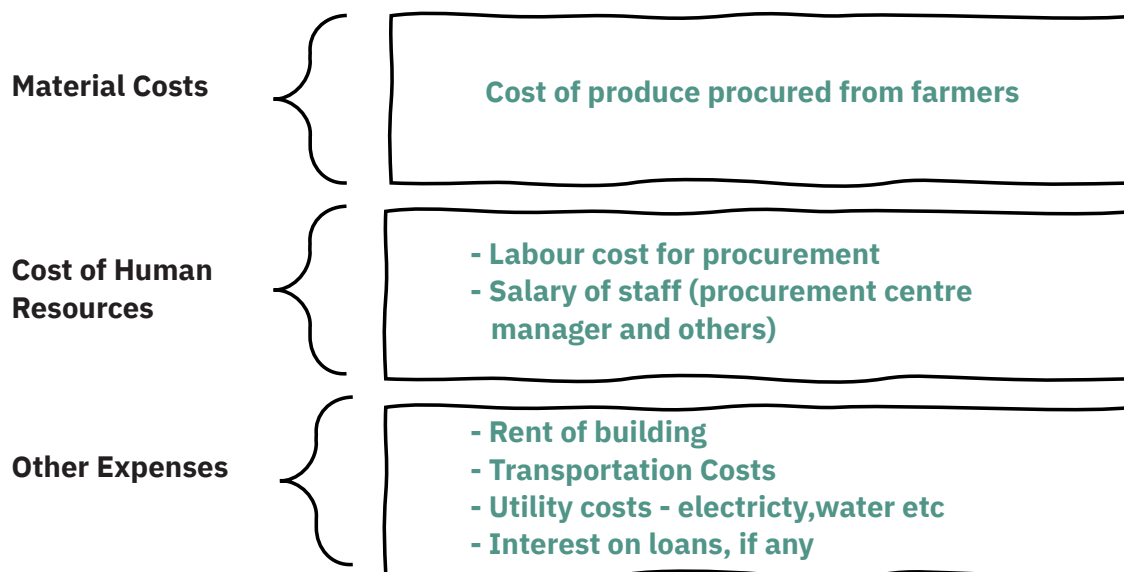
- a. Cost is expressed in terms of money. In Indian context, cost is expressed in Indian Rupee (₹).
- b. Cost is the value of resources used. The resources used could be people, material or other resources like capital, technology and other services. For example, a labourer is employed in a flour mill. The payment made to the labourer is a cost for operating the flour mill.
- c. Cost is attributable to a specific product or service since the resources are utilized for production/ rendering of goods/services.

#### 3.1.1.1. Elements of Cost

The three elements of cost are material, labor, and other expenses.

- a. Materials are directly or indirectly used for the manufacture of a product. For example, in a flour mill wheat is directly used for production of flour, while grease is indirectly used to ensure that the milling machine is functioning properly.
- b. Human resource is needed, either directly or indirectly, in the form of labor to run any business. For example, in a flour mill, a person is employed to operate the machine and directly contributes to the production. An accountant might also be employed in the mill, who indirectly contributes to the production by keeping the business running by managing the accounts.
- c. All other costs excluding material and labor can be classified as other expenses. For example, the rent and electricity charges for the flour mill are other expenses.

An indicative list of various costs associated with operations of a procurement centre are listed below.



### 3.1.2. Revenue

**Revenue is defined as the income a business will earn during a given period of time.** The primary source of revenue for a business is through selling of its products/services. There could be other miscellaneous income for a business through other sources like interest from bank deposits or sales of assets. The revenue from sales is calculated using the equation given below

#### Revenue from Sales = Price X Volume of Sales

Volume of sales is the total sales for a given product during the time period under consideration. If multiple products are there, the revenue from sales of each product needs to be calculated separately.

In case of a procurement centre, the primary source of revenue is the sales of produce procured from farmers.

### 3.1.3. Capital

#### 3.1.3.1. Fixed Capital

**Fixed capital is required for long term or permanent investment in the business. Fixed capital is used for purchase of fixed assets like land, building and machinery.** The investment in fixed capital can be taken out of the business only on closure/dissolution of a business. Since fixed capital is a long-term investment, the money invested usually comes from owner's funds or as long-term loans from banks or other institutional sources.

In case of a procurement centre, fixed capital is required to purchase the following assets

- Weighing Scales
- Tools and Equipment for Quality assaying
- Gunny bags
- Office Furniture
- Computer and Printer
- Vehicles for transportation (if procurement owns vehicles)
- Construction of warehouse (if procurement centre has own warehouse)

#### 3.1.3.2. Working Capital

**Working capital is required for meeting day to day expenses of a running a business including raw materials, power charges, wages, salaries etc.** The concept of operating cycle needs to be understood in order to assess working capital needs of a business entity.

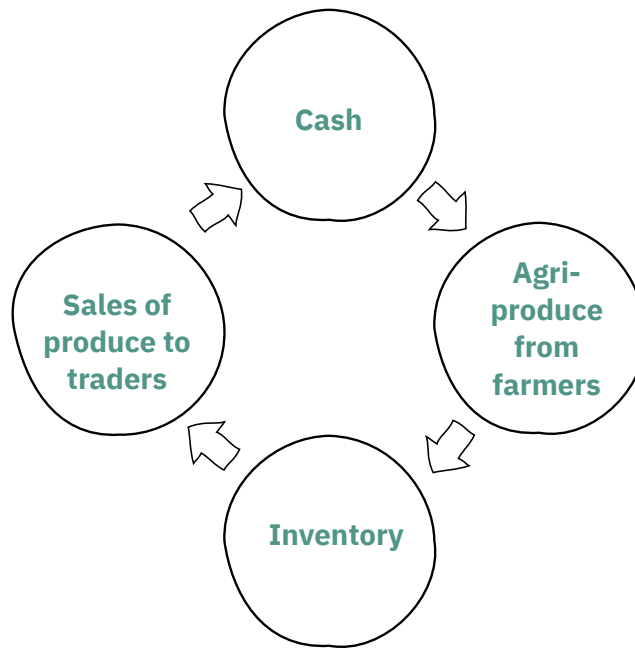


Fig 8.1 Operating cycle of a procurement centre

**Operating cycle is the average period of time required for a business to procure raw materials from suppliers, produce goods, sell the goods, and receive sales proceeds in the form of cash from customers in exchange for the goods.**

**The operating cycle involves the following steps -**

- Cash is paid for purchasing raw materials needed for operation. In case of procurement centre, cash is required to be paid to farmers for procuring the produce.
- Cash is needed to pay direct Labor costs and other indirect costs to convert raw material to finished product. The procurement centre has to pay for rent, transportation costs and labour charges.
- Holding the stock or inventory of finished goods till the same is marketed locks cash in the business for a short period. In the case of procurement centre, the produce procured from farmers will be stored in the godown for a few days/weeks.
- Cash is locked at the customer’s end if the customer does not pay for the products purchased immediately and instead pays them after a time lag of few days or months. For example, the trader instead of paying the cash immediately after the sale, might pay after 2 weeks.

Operating cycle in days can be estimated for a procurement centre using the below given formula

**Operating cycle (in days) = Raw Material storage period + Credit Period given to traders – credit period given by farmers**

**Each of these terms are explained below**

**Raw material storage period -**

This is the average number of days for which procured goods are stored in the godown/warehouse. This can be estimated using the procurement plan as given below

$$\text{Raw Material Storage period} = \frac{\text{Average Storage during the period (in MTs)}}{\text{(Total Procurement plan (in MTs))}} \times \text{Duration of procurement Season (in days)}$$

## Average storage during the procurement period is determined based on

**Storage capacity available at the procurement centre** - More the storage capacity, more the average storage can be.

**1. Demand from Buyers** - Buyers might be willing to buy only if a certain minimum quantity is delivered by the FPC. For example, a trader might want to buy in lots of 25 MT. In such a case the FPC has to store the produce in its godown till 25 MT is reached. In some cases, the trader might be okay with daily dispatch of smaller lots of say 5 MT directly from farmgate. In such a scenario, there is no need to store the produce. i.e., the raw material storage period is zero.

**2. Demand to procure from farmers** - There can be scenarios where many farmers have harvested the produce at the same time and want to sell to the FPO immediately. In such a scenario, the FPC will have to procure and store the produce in greater quantities than planned.

**3. Credit Period allowed by farmers** - Farmers might be willing to give their produce on credit to the FPC, with an agreement that payment will be made by FPC in 7-14 days. This is the credit period allowed by farmers.

**4. Credit Period Given to Traders** - FPO might allow the traders to pay for their purchase from the FPC after 7-14 days. This is the credit period given to Traders by the FPO.

After estimating the duration of operating cycle in days, the number of such cycles that will happen during the procurement season has to be estimated using the formula given below. The business duration will be the number of days in the procurement season for a procurement centre.

### No. of operating Cycles = Business duration (in days)/Operating cycles (in days)

The amount of working capital required is estimated as given below.

### Working Capital required (INR) = Total Procurement Plan + Other expenses (INR) / No. of operating cycles

**Sample Calculation** - Suppose the FPO has the plan to procure 300 MTs in 3 months from October to December. FPO has to immediately pay to the farmers on cash, while the trader will buy in lots of 25 MT and make payment to FPC after 7 days of delivery. The FPC also needs Rs. 50,000 per month to meet its operational expenses including that of procurement.

Credit Period allowed by farmers = 0 days

Credit period given to traders = 7 days

Average storage required during the period = 25 MTs

Total Procurement plan = 300 MTs

Duration of procurement season = 90 days

Raw Material storage period =  $25/300 \times 90 = 7.5$  days

Operating Cycle in days =  $7.5 + 7 - 0 = 14.5$  days

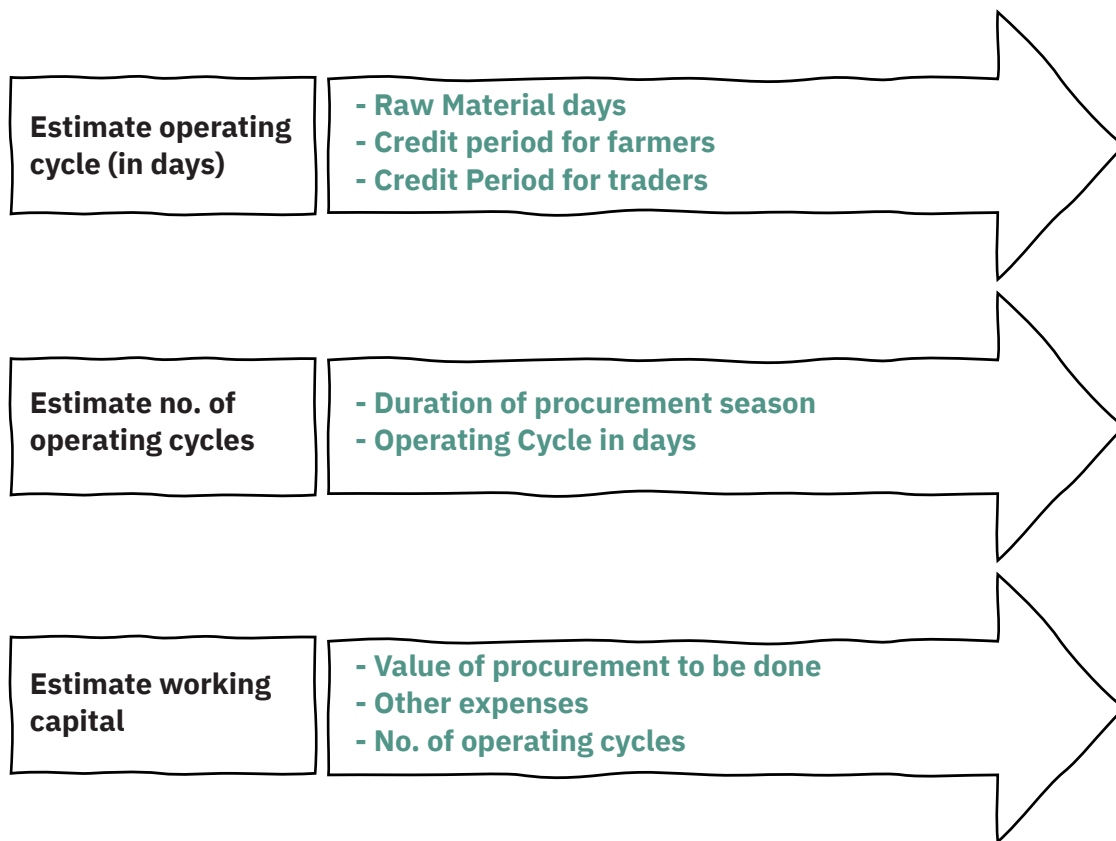
No. of operating cycle in 3 months =  $90/14.5 = 6.20$  operating cycles

Total Procurement plan in INR =  $300 \times 30000 = 90$  lakhs

Working capital required =  $(90 + 1.5)/6.20 = 14.75$  lakhs

Now let us see how the FPC will operate with Rs. 14.75 lakhs. FPC can buy approximately 48 MT of produce using 14.75 lakhs. Once 25 MT is procured using 7.5 lakhs, FPC will contact the buyer and sell the produce to the buyer. FPC will continue to procure with the balance amount of 7.25 lakhs available with it. Within 7 days of selling the produce, buyer will pay FPC, 7.57 lakhs (Assuming Rs. 31,000 per MT). Now FPC again has enough cash to start another round of procurement. This cycle repeats till 300 MT of produce is procured from the farmers and sold to the buyer.

## Steps in Estimation of Working Capital



### Thumb rules for Working capital management

1. If a business uses large quantities of raw material or inventory at any time then the working capital needs are high. If a procurement centre procures in large quantity and stores, without being able to find buyers, it increases the working capital requirement. On the contrary if the procurement centre can buy produce and sell immediately it can operate with minimum working capital
2. If a business is able to collect revenues in cash or as early as possible, it reduces the amount of working capital needed. i.e. if the procurement centre can collect the payment from buyers at the earliest without giving much credit period, the working capital requirement can be reduced. On the contrary, if traders are extended higher credit periods
3. If a business can delay payments for raw material and labor as late as possible then it reduces the amount of working capital needed. In case of a procurement centre, if the farmers agree to wait for 1-2 weeks before receiving payment for their produce, that will reduce the working capital requirement.

## 3.2. Financial Statements

Financial statements are formal records of the financial activities and position of a business, person, or other entity. Relevant financial information is presented in a structured manner and in a form which is easy to understand. Financial statements give an overview of the performance of the health of enterprise. The three financial statements are - (1) the Income Statement, (2) the Balance Sheet, and (3) the Cash Flow Statement.

### 3.2.1. Income Statement

**The income statement shows the performance of the business for a given period, in terms of the revenue and costs involved in the business and profit or less generated during the period.** The basic equation underlying the income statement is **Net Income (Profit/Loss) = Revenue - Expenses**

## The sample structure of the income statement of a procurement center is given below

Table 8.1. Income Statement

INCOME STATEMENT FOR THE PERIOD APRIL 2022 – MARCH 2022	
PARTICULARS	AMOUNT (IN RS.)
1. Revenue from Trading	
2. Cost of Goods Sold ((2.1) +(2.2) +2.3))	
2.1. Amount paid to farmers for procurement	
2.2. Transportation charges for procurement	
2.3. Labour charges for procurement	
3. Gross Profit (1 – 2)	
4. Operating Expenses ((4.1) +(4.2) +(4.3) +(4.4) +(4.5))	
4.1. Salary for Staff	
4.2. Rental for Office Building	
4.3. Electricity Charges	
4.4. Interest on Working Capital Loan	
4.5. Other Expenses	
5. Net Profit ((3) – (4))	

### 3.2.2. Balance Sheet

**Balance sheet gives the financial picture of a company at a specified point in time.** The basic equation underlying the balance sheet is

#### Assets = Liabilities + Shareholders' Equity

**Assets** - Assets are the what the enterprise has today. Assets are everything that is owned by the business - cash in the bank, stocks, machines, buildings - all of it. Assets are also certain “rights” you own that have a monetary value, like the right to collect cash from customers who owe you money. For example, if a trader owes the procurement centre money, the same can be shown under assets

The assets section of the balance sheet of a procurement centre will have the following items

Table 8.2 Assets Side of Balance Sheet

ASSETS AS ON 31 <sup>ST</sup> MARCH 2023	
PARTICULARS	AMOUNT (IN RS.)
1. Fixed Assets ((1.1) +(1.2) +(1.3) +(1.4))	
1.1. Weighing Scale	

- 1.2. Equipment for Quality assaying
- 1.3. Godown Structure (if owned)
- 1.4. Vehicles (if owned)
- 2. Current Assets ((2.1) +(2.2) +(2.3) +(2.4))
- 2.1. Receivables from Buyers
- 2.2. Stock in Godown
- 2.3. Cash Balance
- 2.4. Bank Balance
- 3. Total Assets ((1) + (2))

**Liabilities** - Liabilities are economic obligations of the enterprise, such as money that the enterprise owes to lenders, suppliers, employees, etc. LIABILITIES are categorized and grouped for presentation on the Balance Sheet by - (1) to whom the debt is owed and (2) whether the debt is payable within the year (current liabilities) or is a long-term obligation.

The liabilities section of the balance sheet of a procurement centre will have the following items

Table 8.3 Liabilities side of Balance sheet

LIABILITIES AS ON 31 <sup>ST</sup> MARCH 2023	
PARTICULARS	AMOUNT (IN RS.)
1. Long term loans	
2. Current Liabilities ((2.1) +(2.2))	
2.1. Amount payable to farmers	
2.2. Other payables	
3. Shareholders' equity ((3.1) + (3. 2))	
3.1. Capital Stock	
3.2. Retained Earnings	
4. Total Liabilities ((1) + (2) + (3))	

**Shareholders' equity is the company's value to its owners. It has two components -**

**Capital Stock** - The original amount of money the owners contributed as their investment in the company.

**Retained Earnings** - All the earnings of the company that have been retained, that is, not paid out as dividends to owners.

The final structure of the balance sheet is as given below

Table 8.4 Balance Sheet

BALANCE SHEET AS ON 31 <sup>ST</sup> MARCH 2023			
ASSETS		LIABILITIES	
PARTICULARS	AMOUNT	PARTICULARS	AMOUNT
Fixed Assets		Long term liabilities	
Current Assets		Current Liabilities	
		Shareholders' equity	
<b>TOTAL ASSETS</b>		<b>TOTAL LIABILITIES</b>	

### 3.2.3. Cash Flow Statement

**The Cash Flow Statement tracks the movement of cash through the business over a period of time.** The underlying equation of cash flow statement is

**Cash at the end of a period = Cash at the beginning of the period + Cash inflow – Cash outflow**

Non-cash transactions are company activities where no cash moves into or out of the company's accounts. Non-cash transactions have no effect on the Cash Flow Statement, but they can affect the Income Statement and Balance Sheet.

Positive cash flow for a period means the company has more cash at the end of the period than at the beginning. A negative cash flow for a period means that the company has less cash at the end of the period than at the beginning. If a company has a continuing negative cash flow, it runs the risk of running out of cash and not being able to pay its bills when due. Hence it is very important to keep track of the cash flow statement.

Table 8.5 Cash flow statement

CASH FLOW STATEMENT FROM APRIL 2022 – MARCH 2023	
PARTICULARS	AMOUNT (IN RS.)
1. Opening Balance (Cash + Bank)	
2. Cash flow from Operations (2.1) – (2.2)	
2.1. Cash receipts	
2.2. Cash Payments	
3. Cash flow from Financing Activities (3.1) - (3.2)	
3.1. Loan receipts	
3.2. Loan repayments	
4. Cash flow from Investment Activities (4.1) – (4.2)	
4.1. Purchase of assets	



4.2. Sales of assets

5. Net Cash flow ((2) +(3) +(4))

6. Closing Balance ((1) +(2))

**1. Cash flow from Operations** - In case of a procurement centre, the cash flow from procurement operations includes payments made to farmers, payments received from farmers, payments made to labour and transportation service providers etc.

**2. Cash flow from Financing activities** - Cash flows related to loans are captured under this head.

**3. Cash flow from Investment Activities** - Cash flows related to purchase and sale of fixed assets are captured in this head.

## PRACTICE QUESTIONS

**1.** Suppose the procurement centre has the plan to procure 500 MTs in 6 months from October to March. FPO has to immediately pay to the farmers on cash, while the trader will buy in lots of 50 MT and make payment to FPC after 14 days of delivery. The FPC also needs Rs. 50,000 per month to meet its operational expenses including that of procurement. What is the working capital required by the procurement centre?

- How much will the working change if the farmers are willing to wait for 10 days to receive payment?
- How much will the working capital change if trader is willing to pay immediately on receiving the goods?
- How much will the working capital requirement change if trader is willing to pay after 7 days, and farmers can wait for 3 days to receive the payment?

**2.** The procurement centre is planning to procure 100 tons of produce. The trader is willing to pay 32000 per MT for the produce. The procurement is expected to be completed in 3 months. The costs incurred by the FPC per MT of produce is given in the table below.

COST ITEM	AMOUNT PER MT
Labor Charges	600
Transportation	100

In addition to the above expenses, the procurement center needs to pay rent and salaries per month as given below.

COST ITEM	AMOUNT PER MT
Rent	8000
Salaries	15000

Estimate the profits generated by procurement center if it pays the farmer the following prices.

PRICE PAID TO THE FARMER PER MT	PROFIT GENERATED BY PROCUREMENT CENTER
28000	-----
29000	-----
30000	-----
31000	-----

3. In the above example, assume that the procurement center has purchased 100 MT produce from farmers at 32000 per MT in 3 months. How much should they sell the produce to make a profit of

- a. Zero profit
- b. Rs. 10000
- c. Rs. 15000

4. For each of the cases in Sections 2 and 3 prepare Income statement.

5. Prepare a balance sheet for the procurement center based on the following information.

- a. Procurement center owns a weighing scale worth Rs. 25000 and quality assaying equipment worth Rs. 20000
- b. FPC has given a zero-interest loan of Rs. 10.00 lakhs to the procurement center
- c. Procurement center has a stock of 50 MT of produce worth Rs. 5.00 lakhs
- d. Procurement center is yet to receive payment of Rs. 2.00 lakhs from buyer for the last dispatch
- e. Procurement center has to give Rs. 50,000 as payment to farmers for produce procured from them.
- f. Retained earnings from last year worth Rs. 20000 is available with the procurement center.
- g. Procurement center has some cash balance in their account.

6. Prepare the month-wise cash flow statement based on the information given below

- a. The opening balance as on October – 2021 is Rs. 50,000
- b. FPC transferred 10 lakhs to the procurement centre as soft loan on October 3<sup>rd</sup>.
- c. Payment to farmers of Rs. 3.00 lakhs were released on October 20<sup>th</sup>
- d. Traders made payment of Rs. 5.00 lakhs on October 26<sup>th</sup>
- e. Traders purchased Rs. 3.00 lakhs worth of produce on credit on October 30<sup>th</sup>

f. Procurement center purchased gunny bags and measuring scale worth Rs. 25000 on October 5<sup>th</sup>.

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09

## SOFT-SKILLS FOR SOURCING MANAGERS



## CHAPTER SUMMARY



### OBJECTIVES

To gain an overview of the major soft-skills needed to successfully manage procurement centre operations, i.e. Communication skills, Listening skills, Public speaking skills, Negotiations skills, and time management skills.

#### TIME

3 hrs

#### REQUIRED MATERIALS



Projector and Screen, White Board, Markers, PPT Slides



## GUIDELINES FOR INSTRUCTORS

S.N	TRAINING CONTENT	INSTRUCTOR ACTION	MATERIAL	TIME
1.	Communication skills	<ol style="list-style-type: none"> <li>1. Carry out role play mentioned as Activity i. It can be enacted multiple times with different participants.</li> <li>2. Ask the participants to discuss what went right and what went wrong during the role play.</li> <li>3. Explain the 'GATHER' Approach by connecting it to the role play carried out. Point out the right and wrong approaches used by participants during the role play</li> </ol>	Projector and Screen, PPT Slides	45 mins
2.	Active Listening Skills	Explain active listening skills by connecting it to the approaches taken by participants during the role play	Projector and Screen, PPT Slides	30 mins
3.	Public Speaking Skills	<ol style="list-style-type: none"> <li>1. Enact role play ii given under activities.</li> <li>2. Ask the participants to discuss what went right and what went wrong during the role play.</li> <li>3. Post the role play, explain to the participants on how they should prepare for public meetings.</li> </ol>	Projector and Screen, PPT Slides	45 mins
4.	Negotiation Skills	<ol style="list-style-type: none"> <li>1. Enact role play iii given under activities. It can be enacted multiple times with different participants.</li> <li>2. Ask the participants to discuss what went right and what went wrong during the role play.</li> <li>3. Post the role play, explain to the participants</li> </ol>	Projector and Screen, PPT Slides	45 mins

different stages of negotiation and dos and don'ts of negotiation

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5. Time Management Skills	Explain the importance of time management and tips for proper time management	Projector and Screen, PPT Slides	15 mins
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## TRAINING CONTENT

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### 3.1. Communication skills

It is important to develop a variety of skills for both communicating TO others and learning how to interpret the information received FROM others. Knowing our audience and understanding how they need to receive information is equally important as knowing ourselves. Effective interpersonal communication can be ensured through the GATHER approach – Greet, Ask, Tell, Help in decision making, Explain, and Return.

**Greet (G)** - Whenever you visit a household, greet everyone according to the local tradition. Introduce yourself and explain the purpose of your visit.

**Ask (A)** - After greeting and introduction, ask them about their views on the purpose of your visit. For example, if you are visiting a farmer household to motivate them to sell their produce to FPC, ask them about how they are currently selling their produce and what are the benefits and challenges associated with the same. Listen actively while the other person is speaking. Ask open-ended questions starting with Why, what, where, how, when and how to make the person share more details. Don't compel the person to share information if they are not willing to do the same.



Fig 9.1 Gather approach

**Telling (T)** - Tell them how your proposal will satisfy their requirements or help them in addressing their challenges. Do not pretend to know everything. If you are not confident about some information, tell the person clearly that you will return and answer after consulting with others.

**Help (H)** - In order for the farmers to change their behaviour they will need help in overcoming the fear and doubts. It is important to understand all the fears and doubts, and facilitate behaviour change by clearing all the fears and doubts.

**Explain (E)** - Explain all the aspects of your proposal in detail using informational/educational materials.

**Return (R)** - Repeated visits win trust. Repeatedly meet the reluctant/ resistant farmers, at least 2-3 times before the procurement starts. You can use the help of other farmers/BoDs to establish rapport with reluctant/resistant farmers.

## 3.2. Active Listening

Active listening requires you to listen attentively to a speaker, understand what they're saying, respond and reflect on what's being said, and retain the information for later. This keeps both listener and speaker actively engaged in the conversation.

### Pay Attention



One goal of active listening and being an effective listener is to set a comfortable tone that gives farmers an opportunity to think and speak. Allow “wait time” before responding. Don't cut off them, finish their sentences, or start formulating your answer before they've finished. Pay attention to your body language as well as your frame of mind when engaging in active listening. Be focused on the moment, make eye contact, and operate from a place of respect as the listener.

### Withhold Judgment



Active listening requires an open mind. As a listener and a leader, be open to new ideas, new perspectives, and new possibilities when practicing active listening. Even when good listeners have strong views, they suspend judgment, hold any criticisms, and avoid interruptions like arguing or selling their point right away.

### Reflect



When you're the listener, don't assume that you understand your farmer correctly - or that they know you've heard them. Mirror your respondent's information and emotions by periodically paraphrasing key points. Reflecting is an active listening technique that indicates that you and your counterpart are on the same page.

### Clarify



Don't be shy to ask questions about any issue that's ambiguous or unclear when engaging in active listening. As the listener, if you have doubt or confusion about what your respondent has said, clarify with them immediately.

### Summarize



Restating key themes as the conversation proceeds confirms and solidifies your grasp of the other person's point of view. It also helps both parties to be clear on mutual responsibilities and follow-up. Briefly summarize what you've understood while practicing active listening, and ask the other person to do the same.

### Share



Active listening is first about understanding the other person, then about being understood as the listener. As you gain a clearer understanding of the other person's perspective, you can begin to introduce your own ideas, feelings, and suggestions. You might talk about a similar experience you had, or share an idea that was triggered by a comment made previously in the conversation.



### 3.3. Public speaking

Public speaking, also called oration or oratory, is the process of communicating information to a live audience. The type of information communicated is deliberately structured to inform, persuade, and entertain.

- Organize your thoughts and materials.
- Practice and prepare your speech.
- Eliminate your fear of failure by being confident in yourself.
- Watch your facial expressions and body language in front of the mirror.
- Record yourself and get used to your voice and speaking style.
- Deliver your speech to another person.
- Do some deep breathing and stay hydrated before speaking.
- Incorporate strategic pauses to help regain composure and reduce anxiety.
- Do not memorize your speech – rather, remember key points.

### 3.4. Negotiation skills

Negotiation is a dialogue between two or more parties with the intention of reaching a mutually beneficial outcome or resolving a conflict. In negotiation, each party will try to persuade the other one to agree with his or her point of view. The goal is to avoid arguments and disputes and reach some form of compromise between parties. As mentioned, negotiations are a way of settling differences. The key to a successful one is to arrive at the outcome that you want, without creating any animosity. Negotiations, both in informal and formal forms, follow the same general process as given below -

**Discussion** - The discussion stage of the negotiation is crucial to getting a better understanding of what the other party is looking for. You want to ensure that you are listening, questioning, and clarifying what the other party has brought forth.

**Clarification** - The clarification stage is simply to ensure that both parties have identified and established a common ground on which to start their negotiation. Misunderstandings should be minimized as much as possible.

**Negotiating an outcome** - As mentioned, a win-win outcome is the best outcome. Sometimes, it may not be possible, but it should be what both parties are striving for.

**Agreement** - Each party should keep an open mind so that the best solution can be achieved for all parties. Agreements should be clear to all parties, without ambiguity.

Before starting a negotiation, it is important to assess not only what you are seeking out of the negotiation, but you must keep in mind what the other party is seeking as well. Only by understanding each other's desires can you hope to fulfil both parties' needs in a win-win scenario. If you only seek a scenario where only you get what you want, but the other party is disadvantaged, you will create hostility and are less likely to end up getting the outcome you desire.

## Dos and Don'ts for Negotiators

DOs	DON'Ts
Be clear about your position and what you are seeking.	Don't turn the negotiation into a confrontation. You should not be aggressive. You should remain calm and professional.
Make sure you have a good idea of what the other party is seeking.	Don't be too emotional. Remember what your goal is and do not make the negotiation personal.
Be prepared to compromise with what the other party is seeking; you need to be reasonable to be a strong negotiator.	Don't push the negotiation too far. You should have a good idea of when to keep pressing for your position, to accept a compromise, or to just walk away.
Be confident and consistent with what you are seeking.	

### 3.5. Time Management

**Time management is your ability to use your time effectively, be productive and accomplish not only your daily tasks, but your larger life goals.** It means knowing the difference between being busy and being productive - When you're busy, your mind is preoccupied with your to-do list, skipping from one task to another without focusing on anything. When you're productive, you have a plan for tackling everything you need to do and you're able to get laser-focused on your goals.

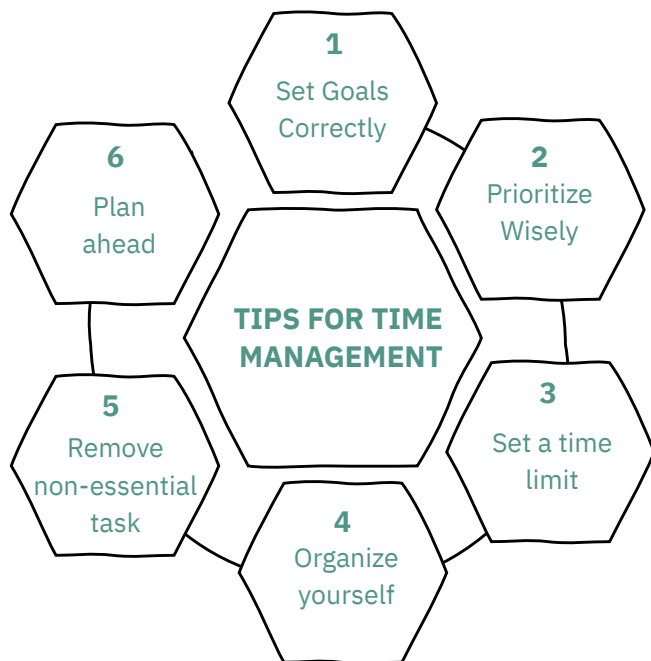


Fig 9.2 Tips for time management

1. Set goals that are achievable and measurable. Use the SMART method when setting goals. In essence, make sure the goals you set are Specific, Measurable, Attainable, Relevant, and Timely.
2. Prioritize tasks based on importance and urgency.
  - a. Important and urgent - Do these tasks right away.
  - b. Important but not urgent - Decide when to do these tasks.
  - c. Urgent but not important - Delegate these tasks if possible.
  - d. Not urgent and not important - Set these aside to do later.

3. Setting time constraints for completing tasks helps you be more focused and efficient. Making the small extra effort to decide on how much time you need to allot for each task can also help you recognize potential problems before they arise. That way you can make plans for dealing with them.

4. Utilize your calendar for more long-term time management. Write down the deadlines for projects, or for tasks that are part of completing the overall project. Think about which days might be best to dedicate to specific tasks
5. It is important to remove excess activities or tasks. Determine what is significant and what deserves your time. Removing non-essential tasks/activities frees up more of your time to be spent on genuinely important things.
6. Make sure you start every day with a clear idea of what you need to do – what needs to get done THAT DAY. Consider making it a habit to, at the end of each workday, go ahead and write out your “to-do” list for the next workday. That way you can hit the ground running the next morning.

## ACTIVITIES

1. A procurement center manager visits a farmer in the village to motivate him to join FPC and sell the produce to the FPC. What and how should be the approach? Select two participants and enact this role play.
2. Procurement center manager has organized a meeting in the village with farmers to talk to them about the benefits of joining FPC. Enact this situation by asking two participants to take up the role of procurement centre manager and 10 participants to take up the role of farmers. Give 10 mins for the participants to prepare.
3. A procurement center manager visits a farmer in the village to motivate him to join FPC and sell the produce to the FPC. What and how should be the approach? Select two participants and enact this role play.
4. A procurement center manager visits a trader to explore the scope of market linkage and finalize the price and quantity. Enact this situation by asking two participants to take up the role of trader and procurement center manager.

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10

## IMPROVING PRICE REALIZATION THROUGH WAREHOUSE RECEIPT FINANCING



## CHAPTER SUMMARY



### OBJECTIVES

- To understand the problem of distress sales
- Understand the relevance of warehouses and Warehouse receipt finance in addressing the problem of distress sales
- Understand the warehouse receipt finance product, its benefits and role of various actors involved

### TIME

1.5  
hrs

### REQUIRED MATERIALS



Projector and Screen, White Board, Markers, PPT Slides



## GUIDELINES FOR INSTRUCTORS

S.N	TRAINING CONTENT	INSTRUCTOR ACTION	MATERIAL	TIME
1.	Distress Sale and Price realization	<ol style="list-style-type: none"> <li>1. Discuss the experience of the participants on distress sale of agricultural produce in their villages.</li> <li>2. Ask the participants if they see any solutions on overcoming the problem of distress sale.</li> <li>3. Explain how commodity-based finance is a potential solution to address the problem of distress sale</li> </ol>	Projector and Screen, PPT Slides	20 mins
2.	Warehouse finance – Actors and their roles	Explain the basics of WRF, various actors and their respective roles as described in section 3.3.1	Projector and Screen, PPT Slides	30 mins
3.	Benefits of Warehouse finance	Explain the benefits of WRF from the point of view of various actors as laid out in Section 3.3.2	Projector and Screen, PPT Slides	10 mins
4.	Other modes of Financing	Explain the concepts of terms loans and working capital loans as laid out in Section 3.4	Projector and Screen, PPT Slides	30 mins



## TRAINING CONTENT

### 3.1. Distress Sales and Price realization problem

In our country, the livelihoods of around 40% of the population including that of farming households depends on

the good yield of the crops cultivated by the farmers. But unfortunately, when the farmers grow a bumper crop, they find themselves in a difficult situation where the prices of the crop fall so low that farmers do not even get the labor and transportation charges.

Usually, farmers take their produce to the mandis immediately after harvesting as they are in immediate requirement of funds and have limited access to storage facilities. Due to this, in a very short time, there is an abundance of produce in the market. When there is a glut in the market due to sudden inflow of harvested produce, the prices of the produce fall. The farmers are forced to sell their produce at cheaper prices as they have to pay back the debt that they have taken for producing the crop in the first place and need capital for the next season. Thus, a farmer who has produced a bumper crop instead of being rewarded for his/her efforts is ruined because he/she has to sell the produce at unremunerative prices. We have even seen many cases where farmers either burn or throw away their produce.

### 3.2. Warehousing and Commodity Backed Finance

As discussed in the previous section, farmers are faced with two challenges at the time of harvest.

1. Excess supply during the harvest seasons suppresses the prices of the crop below remunerative levels.
2. Farmers are in immediate need of cash to meet their debt obligations and also to meet the investment requirements for the next agricultural seasons.

The above challenges can be overcome through warehousing and utilizing the commodity backed finance facilities from financial institutions as explained below.

1. If the prices during harvest season is low, farmer stores the produce in a recognized warehouse. Instead of farmers, FPOs can also procure from farmers and store the produce in warehouses on behalf of farmers.
2. Farmer/FPO obtain loan under Warehouse receipt finance (Commodity Backed Finance) from financial institutions against the commodity stored in the warehouse. The amount thus received can be used for meeting the financial obligations.
3. When the price of the commodity increases during the off-season, close the loan with the financial institution and release the commodity. The commodity can then be sold at the prevailing market prices to ensure higher return for the farmers/FPOs.

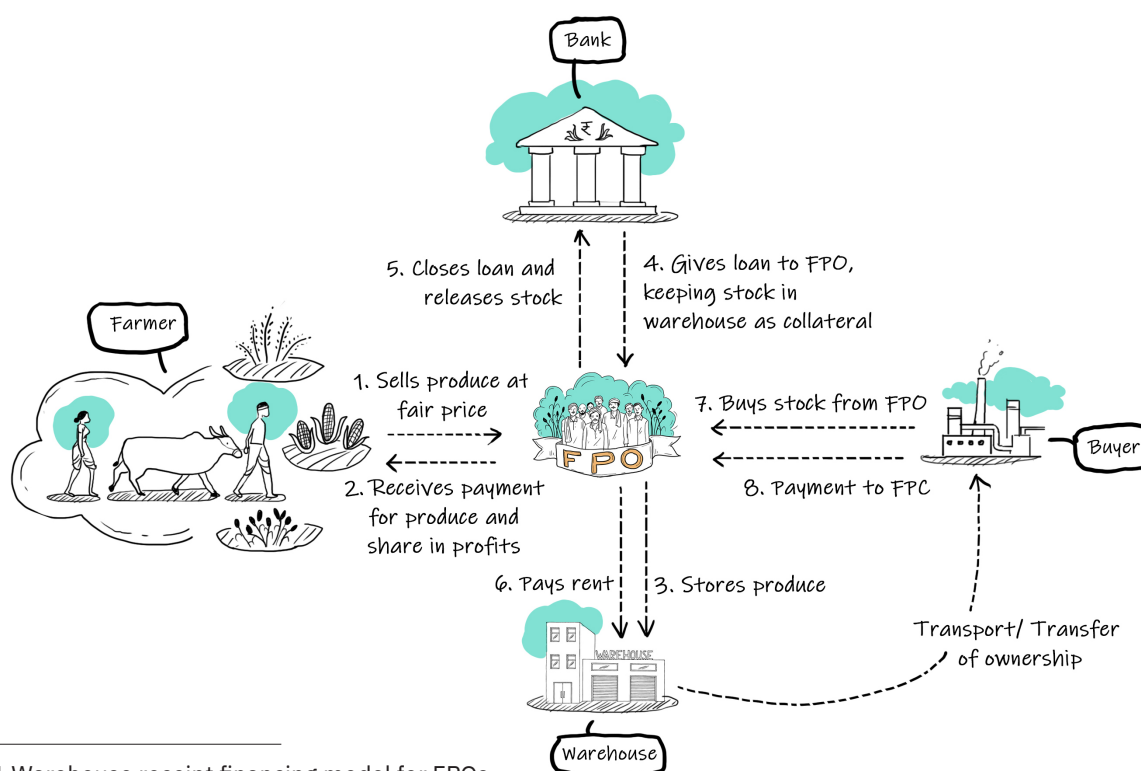
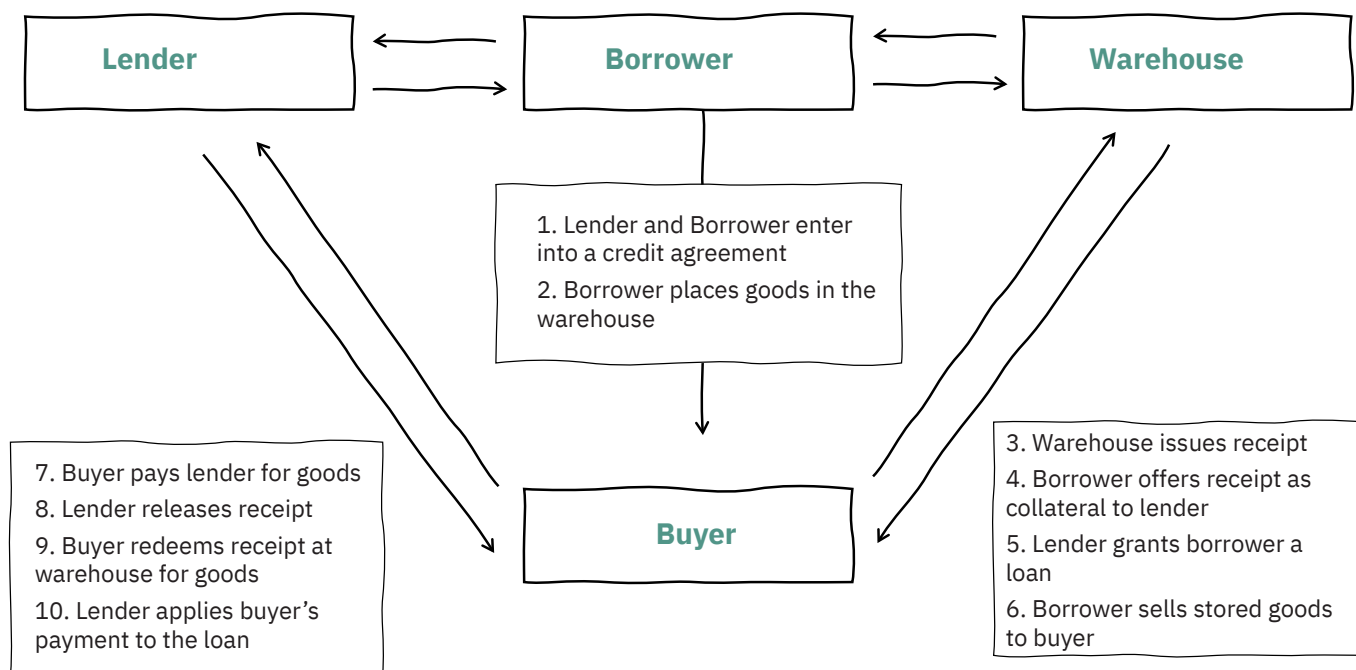


Fig 10.1 Warehouse receipt financing model for FPOs

The commodity-based finance or warehouse receipt finance is explained in more detail in the following sections.

### 3.1. Warehouse Receipt finance

Warehouse receipt finance (WRF) uses securely stored commodities as loan collateral. In a WRF transaction clients, such as farmers, traders, processors and others to deposit commodities in a secure warehouse. The warehouse operator issues a receipt certifying the deposit of commodities of a particular quantity, quality and grade. This receipt is called a warehouse receipt. The clients can then use the warehouse receipt as a form of portable collateral to request a loan from a financial institution.



Basic features of a warehouse receipt financing transaction

Source- Kreshavan, 2008

It is important to note that the company or institution operating the warehouse where the produce is stored is recognized by the lending bank. If the warehouse company is not in the list of companies/institutions identified by the bank then there may be difficulty in getting the loan. The key features of the WRF product are given below.

**1. Eligibility** - Any institution engaged in the trade of produce or commodity whether it is farmer, trader, producer company, co-operative organization, processor, importer, exporter or small-scale industry etc. is eligible to apply for loan against commodities, provided the underlying commodity in their possession meets the company's criteria.

**2. Loan Tenure** - The tenure of the loan varies according to the yield and can be up to a maximum of 12 months.

**3. Margin** - Margin is determined on the basis of Reserve Bank of India guidelines, market scenario, volatility in the market price of the commodity etc. The percentage of margin is subject to change at any time without prior notice at the discretion of the Company. Generally, the margin is 30-40% of the total value of the commodity. This means that, if the total value of commodity stored is Rs. 1.00 lakh, the client



can get up to 70% (Rs. 70,000) as loan from the financial institution.

**4. Rate of interest** - Interest is charged from the customers by banks and financial institutions at a fixed rate. However, the rate of interest may vary depending on certain factors, such as-

- type of produce
- period
- internal/external cost of investment
- operating cost of the loan
- Credit risk and other factors

**5. Collateral Security** - The main collateral asset will be the commodity/product stored. However, as per the credit norms, other security documents will be required.

The role of various institutions in the WRF ecosystem is explained in the following section.

### 3.1.1. Role of Various actors in Warehouse Receipt Financing

#### 3.1.1.1. Godown

Licensed warehouses store the produce and provide warehouse receipts to the depositors. Warehouses keep the stored produce as security against the loan taken from the bank or financial institution until permission is obtained from the funding institution. In lieu of this service, a service fee is paid by the farmer as well as the financed institution to the warehouse owner or the company operating from it. It is a main source of income from warehouses.

#### 3.1.1.2. Lending institution

The main role of the funding institution is as follows -

- Approval and disbursement of loan after verification of documents
- Periodic monitoring for security of collateral and loan
- Ensure repayment of loan and payment of service fee to Collateral Management Agency

#### 3.1.1.3. Borrower

The primary beneficiary of commodity finance is the borrower. While preparing the design of this service, the interest of the borrower is first kept in mind. In this arrangement, the borrower has the following important roles -

- Providing all the necessary documents related to the loan
- Store the produce in a registered warehouse
- Repayment of loan on due dates
- Full payment and settlement

#### 3.1.1.4. Collateral management agency

The collateral management agency ensures that commodity against which the loan is granted is securely stored in the warehouse.

1. Conducting storage survey and clearance of warehouse and issue of report on suitability of warehouse

2. Acceptance of financed stock in the warehouse. In cases where the entire stock held in the godown is financed by the lender, he/she may supervise the entire godown.
3. Ensuring proper tagging, stacking etc. of financed stock within the godown
4. Maintains commodity samples for quality checks and weighing of produce
5. Signing and supporting disbursement related documents along with verification of documents
6. Sending reports to the lender at regular intervals
7. Cooperating with relevant organizations in stock audit
8. Controlling the movement of goods in and out of the warehouse
9. Oversee daily stock maintenance and follow guidelines
10. Permission to release goods only on receipt of written instructions from the lender
11. Ensure security of the warehouse.

### 3.1.2. Benefits of Warehouse Receipt Finance

A well-developed warehouse receipt finance system includes farmers, banks, financial institutions, insurance companies, commodity exchanges. WRF brings about benefits at both micro and macro level. In fact, the mechanism has the potential to hit many targets with a single dart.

**1. For Farmers** - Warehouse receipt finance enables farmers to store their produce and realize better prices during the off-season. Easy access to institutional credit with backing of their agricultural produce also reduces the need for farmers to depend on money lenders who charge hefty interest rates.

**2. Encourage scientific storage** - It is estimated that 25-30 per cent of agricultural produce every year is lost due to poor storage and frail handling post-harvest. Increased usage of WFR will kick-start a circle of investments in warehousing infrastructure and help scientific storage of farm produce and fix the missing link in the supply chain.

**3. Enhancing transparency and efficiency in commodity marketing** - Warehouse receipt systems require independent weighing and quality testing or grading of the commodity, which is usually carried out by a third party such as a warehouse manager or a specialized inspection agency. Independent weighing and grading enhance the transparency of commodity transactions, especially in cases of unequal bargaining power between small sellers and large buyers.

**4. For banks** - The average tenor of loan against WHR is around six months. This helps banks with their asset-liability mismatch issues as they can churn portfolios quickly. Further, lending against WHR is safer and more liquid for banks. Intermediaries like collateral managers make the job easier for banks as far as underlying collateral is concerned. WRF help banks achieve their priority sector lending targets in an efficient way, rather than following the mandate in a willy-nilly manner, so far.

**5. For the economy** - WRF can dramatically reduce inter-seasonal price fluctuations increases liquidity in the rural economy, helping consumption. A well-developed WRF system can also help fix the supply issues, which will lead to a lower inflation-lower interest rates regime in India.

## 3.2. Other modes of Financing

In addition to warehouse receipt financing FPOs can access the following loans products form formal financial institutions to meet the capital requirements.

### 3.2.1. Term Loan

Term loan is a short-term or long-term loan approved and disbursed by any financial institution. The offered loan amount shall be repaid in regular payments, such as Equated Monthly Instalments (EMIs) over a defined period of time. Term loans can be offered in both fixed and floating rate of interest. The repayment tenure of a term loan for business purposes is usually between 12 months to 120 months. Term loans can be availed to build infrastructure that the FPOs want to develop, when they feel the need to create the facilities of their own in order to move up the value chain. Term loans are typically needed to set up processing units, processing/grading/ sorting yards, storage godowns, cold storage, transport facilities, etc.

The eligibility criteria for availing term loans and other requirements vary from bank. The eligibility criteria for Bank of Baroda (as on 29.03.2022) for term loans and working capital loans are given as an example in the table below.

Table 10.1 Eligibility criteria for Term loans and Working Capital loans - Bank of Baroda

<b>Objectives</b>	To meet the credit requirements of the Farmer Producer Companies / Organizations in the form of term loans to create an asset and Working capital loan to meet the recurring expenditure.
<b>Nature of limit</b>	<ul style="list-style-type: none"><li>- Term loans for investment purpose</li><li>- Working capital.</li><li>- Composite loan comprising of both working capital and term loan requirements.</li></ul>
<b>Eligibility Criteria</b>	<ul style="list-style-type: none"><li>- Farmer Producer Companies/Organizations shall be registered under legal provisions i.e., Cooperatives, Producer Companies, Farmer Producer Companies, Societies and Trust.</li><li>- Members and stake holder of the FPCs/FPOs shall be farmers, milk producers, fishermen, weavers, rural artisans, craftsmen and institutions of primary producers.</li><li>- The productive land under an FPC/FPO shall be around 500 to 4000 ha.</li><li>- The minimum number of farmer producers in FPC is 500.</li><li>- FPC/FPO with six months of active operations from the date of registration minimum capital of Rs 5.00 lakh, positive net worth and one audited balance sheet</li><li>- In case of FPCs/FPOs eligible for Equity Grant and Credit Guarantee Scheme, SFAC guidelines issued on the scheme to be followed.</li></ul>
<b>Loan amount</b>	- Maximum loan amount under financing per FPC/FPO is Rs 1.00 Crore.

<b>Third party Guarantee</b>	- as per bank's existing guidelines.
<b>Margin</b>	- Term loan - Minimum 15%. - Cash credit - Minimum 20%.
<b>Security</b>	- Primary Security - Hypothecation of assets created out of bank finance - Collateral Security - No collateral security shall be obtained in case the loans are covered under credit guarantee scheme implemented by SFAC. - In all other cases, branches to obtain Minimum 100% collateral security.
<b>Repayment</b>	Term Loan - Repayment period maximum up to 7 years (including the moratorium period of maximum 12 months)  Working Capital - 12 months subject to renewal annually.
<b>Forms &amp; Documents</b>	Application, copy of bye laws, copy of proceedings/resolution/Inter se agreement by all members, articles of agreement by authorized members, appropriate DPN, Letter of continuity, Hypothecation agreement, General Term loan agreement, Letter of general lien and set off, mortgage deed, third party guarantee, comprehensive insurance of assets, letter of general lien and setoff, undertaking from borrower/guarantor for disclosure to CIBIL and any other document stipulated in sanction advise.

### 3.2.2. Working Capital Loans

Working capital loans are taken to finance the day-to-day business operations of any business. In case of FPOs working capital, loans can be availed to

1. To finance cultivation expenses of FPO's member farmers
2. To finance operational expenses of the FPO
3. To finance procurement operations of FPO
4. To finance inventory of FPO

Working capital loans are given as credit limits wherein the maximum loan amount the FPO can borrow is defined based on the assessment of banks. FPO can access funds from the line of credit at any time as long as they do not exceed the maximum amount (or credit limit) set in the agreement. Also, interest is charged on the amount borrowed and not the borrowing limit. These loans are sanctioned for a period of 12 months and should be renewed annually.

### 3.2.3. Priority Sector Lending to FPOs

Priority sector lending (PSL) is a lending requirement administered by the RBI on scheduled commercial banks requiring banks to give a minimum proportion of their loans to sectors of development importance or the sectors that have difficulty of getting loans. PSLs are aimed to provide institutional credit to those sectors and segments for which it is difficult to get credit. According to priority sector norms, scheduled commercial banks have to give 40% of their loans (measured in terms of Adjusted Net Bank Credit or ANBC) to the identified priority sectors in accordance with the RBI regulations.

Loans to FPOs which satisfy the following conditions are covered under Priority sector lending by RBI.

1. Loans for the following activities will be subject to an aggregate limit of ₹2 crore per borrowing entity -
  - a. Crop loans to farmers which will include traditional/non-traditional plantations and horticulture and loans for allied activities.
  - b. Medium and long-term loans for agriculture and allied activities (e.g. purchase of agricultural implements and machinery and developmental loans for allied activities).
  - c. Loans for pre- and post-harvest activities viz. spraying, harvesting, grading and transporting of their own farm produce.
2. Loans up to ₹75 lakh against pledge/hypothecation of agricultural produce (including warehouse receipts) for a period not exceeding 12 months against NWRs/eNWRs and up to ₹50 lakh against warehouse receipts other than NWRs/eNWRs.
3. Loans up to ₹5 crore per borrowing entity to FPOs/FPCs undertaking farming with assured marketing of their produce at a pre-determined price.



**SUSTAINABLE  
DEVELOPMENT GOALS**

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