

SAMRIDDHI

10A

VALUE ADDITION BY FARMER PRODUCERS ORGANIZATIONS



DGRV



PRIMARY PROCESSING ACTIVITIES

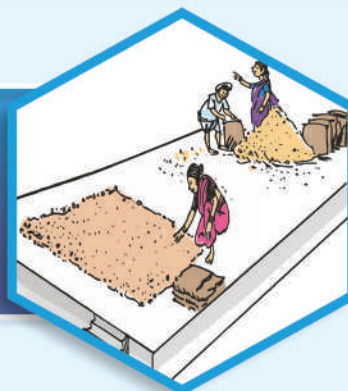


CLEANING

Washing, no foreign matter, stones / pebbles, seeds of other plants etc.

DRYING

Moisture content up to specified limits only



GRADING & SORTING

As per quality standards for each commodity

PACKING

As per commodity



10A

Samridhhi

VALUE ADDITION - BY FARMER PRODUCERS ORGANIZATIONS

Self-learning Module for
Board of Directors (BoDs) of FPOs



Samriddhi

VALUE ADDITION

By Farmer Producers Organizations

First Edition – Dec 2020

Price – Rs. 100

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Mahila Abhivruddhi Society (APMAS)

**Plot 11 & 12, HUDA Colony, Tanesha Nagar, Manikonda,
Hyderabad – 500089, Telangana, India**

Off: 08413-403118

Mail id:- info@apmas.org website – www.apmas.org

Why Self-Learning Module Kit for FPO Board of Directors?

Though Indian farmers are facing a number of challenges, agriculture sector has achieved significant momentum in the past decade. Mobilizing farmers into their collectives, as Farmer Producer Organizations (FPOs), has emerged as the most preferred institutional mechanism for farmer prosperity by policy makers & practitioners. FPO is the lynchpin strategy for Doubling Farmers' Income in India over the next five years. Almost 10,000 FPOs have already been promoted by different agencies in India and there is a plan to promote another 10,000 new FPOs during 2020-2024 under the Central Sector Scheme (CSS) of Government of India announced by Prime Minister of India in the year 2019. The FPO movement is still at a nascent stage with FPO Board of Directors being dependent on their promoters as their own vision, business orientation & capacities being limited as very limited training provided to them. FPOs face several other challenges such as good governance, management of business, effective systems, access to finance & markets and government schemes. The ability to influence the agri-value chain development in a significant manner remains far-fetched for the FPOs.

Building the capacities and capabilities of the Board of Directors of FPOs is fundamental & a prerequisite to the success of the FPOs and their ability to emerge as business organizations providing a range of need-based services to member-farmers to increase their profits from agriculture. Continuous training and mentoring of the FPO Board of Directors, staff and wider membership is the top most priority for APMAS, through its FPO Incubation Centre, as we have been engaged in promoting a large number of FPOs and in mentoring FPOs promoted by others to engage in appropriate agriculture value-chain development initiatives.

Having reviewed existing training manuals and modules on FPOs, we found a major gap of not having high-quality, practical and user-friendly self-learning modules for FPO Board of Directors. Building on our experience of developing self-learning modules on self-regulation of SHG institutions and

20 years of experience in institution building trainings, APMAS team led by Mr. Madhu Murthy & Mrs. Ramalakshmi, worked for more than two years in collaboration with resource organizations, partner NGOs, training institutions and FPO representatives to develop a series of 12 easy-to-use self-learning modules kit (booklets) for FPO Board of Directors covering Need & Importance of FPO, Institutional Design, Membership, Leadership & Governance, Management, Registration & Legal Compliance, Business Planning, Productivity Enhancement, Collective Marketing (input & output), managing Farm Service Centre, Accounting & Financial Management.

FPOs being democratic autonomous business entities in perpetuity, there will always be need for capacity building of the FPO Board of Directors as there will be periodic election and change of Board of Directors. We are certain that these easy-to-use self-learning module kits will be of immense use for the FPOs to become viable organizations serving their membership. FPO promoters have to systematically support FPO BoDs to learn from these self-learning module kits. The PFO promoters and other Stakeholders will also be able to use FPO BoD Self-Learning Module Kit to effectively mentor and work towards FPOs becoming self-managed and viable business organizations. APMAS has taken responsibility of producing these self-learning module kits in Telugu & English, based on the demand, these modules are translated into Gujarati, Hindi, Kannada, Marathi Orisa & Tamil in partnership with Resource Organizations: BAIF, CYSD, MYRADA, Centre for Excellence on FPOs Karntaka, ILRT and Tamilnadu FPO Consortium. NABARD and BIRD Lucknow are already using / reproduced our FPO BoD self-learning modules and we hope other Implementing Agencies of the FPO central sector scheme and Cluster Based Business Organisations (CBBOs) and other agencies make best use of these modules to building the capacities of the FPO BoDs to effectively manage their FPOs as viable business orgnisations. Very much look forward to your feedback!

Best

CS Reddy

CEO of APMAS

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About the Self-Learning Module

BoD Self-Learning Module

1. FPOs: Introduction & Rationale
2. Institutional Structure & Design of FPOs
3. Membership in FPOs
4. Governance in FPOs
5. Management of FPOs
6. Legal Compliances of FPOs
7. Business Plan
8. Accounting & Finance
9. Output Marketing by FPOs
- 10. A. Value Addition By FPOs**
- 10. B. Marketing - Further Thoughts**
11. A. Input Supply Services
B. Farm Productivity Enhancement Services
12. Leading the FPOs

This Booklet in the series of self-learning modules for BoD members of FPOs deals with “Value addition by FPOs”.

Purpose

The purpose of this module is to enable the BoD members of FPOs equip with necessary understanding and orientation so that they can play their role effectively and lead their FPOs into vibrant entities benefiting their members.

Target Group: This module is aimed for Members of the Board of Directors of Farmer Producers Organisations. Members of the BoDs shall have at least one year of experience in governing their FPO.

Learning Objectives

Following are the key learning objectives of this Booklet.

- » To know the need and importance of processing and value addition to agricultural commodities

- » To identify different activities for primary (basic) processing of agricultural commodities
- » To realize the extent of value addition to agricultural products through secondary (advanced) processing
- » To identify the need and benefits of storage for business activities of FPO
- » To get awareness on different key aspects of product distribution to buyers/ consumers

Structure and Contents

This booklet start with the importance of processing and value addition and the role of FPO in it. Then it deals with the details of primary processing i.e. cleaning, grading and packing. In secondary (advanced) processing, different ways of milling, storage and transportation are covered.

How to Use

The BoD members can use these modules on their own or they can also have an external resource persons to facilitate the learning from these modules. Along with this module, there are posters related to this module which the BoD members can display at relevant places for learning.

We wish you enjoy the learning from this module and take up marketing in your FPO in more effective and efficient manner.

Glossary / Acronyms

- FPO (Farmer Producers Organization)** : A Farmer Producers Organization (FPO) is a registered organization owned and controlled by their farmer members. The purpose of FPO is to meet the common needs of it's members by providing required services to them. FPOs are engaged in different activities in Agriculture and allied sectors. As FPOs are formal organizations, they need to have their office/ infrastructure, staff, systems and governed by the Board of Directors.
- Sub-committees** : For each major function like marketing, finance, input supply etc, FPOs Board can form a sub-committee among them (2-3 member). Each sub-committee look after their concerned function and work under the overall supervision of the Board.
- General Body** : All the members of an FPO is termed as General Body of that FPO. General Body is the supreme authority in an FPO.
- FSSAI** : Food Safety and Standards Authority of India (FSSAI) certification issued by Ministry of Health & Family Welfare, Gol to regulate safety and standards for food products.

Collective Marketing : This is a model of marketing wherein the FPO buys the produce of their members and sell in the market after required processing. It means for a farmer member, their FPO itself is the buyer of their produce. In this model, the stock is the property of the FPO and thus the marketing is the bonus of the FPO. Collective marketing is an important service to members so that they overcome many constraints in marketing of their produce individually.

Value chain : The entire set of activities in agricultural commodities from basic raw material (such as wheat seed) till delivery of the final product (such as some food item like roti) for consumption by the consumer is called value chain. Different stages like pre-production, production, post-harvest, processing, first sale (wholesaling), second sale (retailing) etc. are interlinked like a chain.

As we go from beginning to the end of the chain, the value of the product keep on increasing and that is why it is called value chain. For taking up any activity in any agricultural commodity, it is important to understand different activities and players (like input suppliers, financial institutions, processors, distributors, wholesalers, retailers etc.) in the value chain of that commodity.

Value addition : Value addition is the extra value created over and above the original value of a product and such value added products demanded by consumers is key for success of business. Value is in terms of the price that consumers are willing to pay based on their perceived value of the product.

For example, the mandi price of average quality Arhar (Redgram) in March 2020 was Rs. 51/ kilo. But if the grain was cleaned and sieved properly with broken and damaged grains removed, it could fetch as much as Rs. 61/kilo. Even if the cost of this cleaning and grading is Rs.2 per kilo, the net value addition comes to Rs.8 per kilo (Rs. 61 (final price of output) - Rs. 51 (cost of unprocessed grains) – Rs. 2 (cost of adding the value).

Primary processing : Primary processing is the basic processing of agricultural commodities through activities of cleaning, grading, drying and packing. Primary processing is necessary for most agricultural commodities for making them marketable.

Secondary processing : Secondary processing is the advanced processing through which the agricultural commodities are made into value added products. Value addition through secondary processing is done through making agricultural commodities into ready to cook/ eat products (like dal, atta, oil etc.), storage, transportation to high demand areas etc.

We cannot directly eat paddy. But when it is milled to become rice it can be used by us. Milling is a secondary processing. We cannot directly eat soybean. But by extracting oil, we can get usable edible oil and de-oiled cake. Oil extraction is a secondary processing.

FPO Federation: : FPO Federation is the secondary level FPO formed with primary/small FPOs as their members. Few primary FPOs located in contiguous area can federate into their Federation which is also a registered, formal entity. FPO Federation is necessitated to take up higher level activities like secondary processing, branding, marketing, financial linkages etc.

Negotiable Warehouse Receipt (NWR): : Negotiable Warehouse Receipt (NWR) is the warehouse receipt issued by registered warehouses to customers against commodities deposited for storage. Negotiable Warehouse Receipt can be used as an instrument for availing of finance from financial institutions. Only warehouses registered under Warehouse Development Regulatory Authority WDRA (Department of Food and Public Distribution, Ministry of Consumer Affairs, Food & Public Distribution, Government of India) can issue Negotiable Warehouse Receipt.

Warehouse Receipt : Whenever some commodity is stored in a warehouse, the Warehouse is expected to issue a receipt. This is usually called a Warehouse Receipt. Many processors and banks also give advances against Warehouse Receipts. But all Warehouse Receipts are not NWR. Our ability to trade is much more if it is a NWR.

Product distribution : Product distribution or supply is the process of delivering products from the point of production to the point of consumption. Product distribution is all about making the required products available to consumers in required time and at required place.

Distribution channel : A distribution channel is a network of intermediaries, agencies or activities through which a product can be delivered from the point of production to the point of consumption.

Distribution channels can include wholesalers, retailers, distributors, retail agencies, transportation etc.

Baseline

As given in the earlier section of “About the Learning Module”, this Booklet: Samridhhi deals with topic “Value Addition by FPOs”.

Given below are some basic questions for you on this topic. Let’s answer these questions ourselves. The purpose of this baseline is to assess our present understanding on this subject and thus get into learning more about “Value Addition by FPOs”.

- 1. What is the need for processing of and value addition to agricultural commodities?

.....
.....

- 2. What are the different ways by which processing and value addition can be done for agricultural commodities?

.....
.....

- 3. What different infrastructure is required for processing and value addition by FPOs?

.....
.....



PROCESSING & VALUE ADDITION: Need and Rationale

Session Objective



To know the need and importance of processing and value addition to agricultural commodities

To identify the importance of FPOs being active players in value chain of agricultural products

Key content items

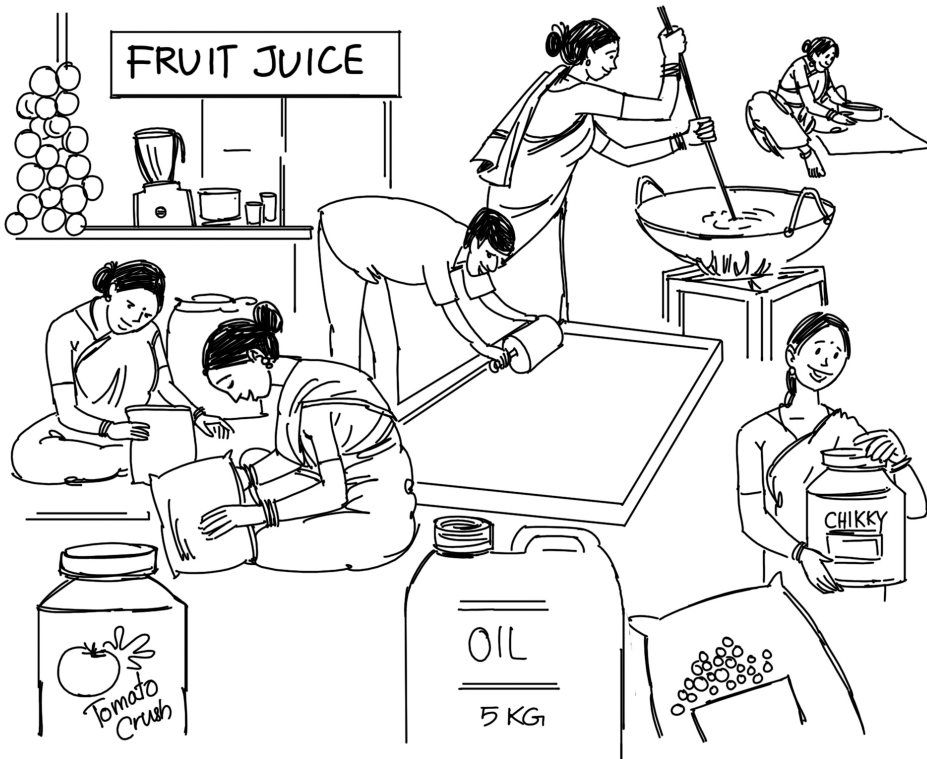
1. Benefits of processing of agricultural commodities
2. Need for value addition to agricultural commodities
3. Role of FPO in processing & value addition

Background

We can recall that we have seen about different aspects of Marketing in Booklet *Vipani*. In continuation of the Marketing Cycle, this Booklet, *Samriddhi*, deals with value addition and product supply. Processing is one of the ways of value addition to products. Processing can be primary/basic one which include simple activities of cleaning, grading, packing etc. Whereas advanced/ secondary processing involve converting agricultural commodities (like redgram, groundnut, wheat etc.) into ready-to-cook products like dal, oil, atta etc. Also, storage and transportation are necessary requirements for more value realization.

In this booklet, we will also deal with one very important component of marketing i.e. product distribution. This involves supply of products to the customers/ buyers and required transportation and logistics arrangements for this.

With this background, shall we get into the details of value addition and product supply management? To start with, first let's look at the need and rationale for value addition for agricultural products.



1.1 Need for Processing and Value Addition

As we can recall, the basic goal of our FPO is increasing the income levels of our farmer members by providing required services like marketing. For marketing, processing and value addition is an essential activity as indicated by the following aspects.

Increase in product value

Processing can enhance the value of the agricultural products.

Let's take the example of Arhar (Redgram) for this and different aspects of it are given below.

Selling price of Redgram in the market for farmers - Rs. 5,100 per quintal

Price of cleaned and graded Redgram - Rs. 6,100 per quintal

Cost of cleaning and grading Redgram - Rs. 400 per quintal

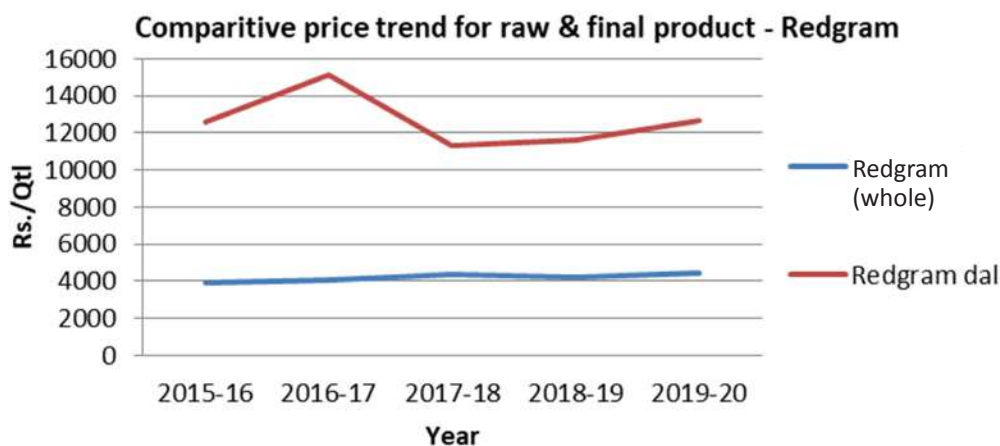
So, the net value addition – Rs. 600 per quintal (Rs.6,100 – Rs.5100 - Rs.400)

This indicates that if FPO gets into processing, it can give more value (Rs.5,700) to their members.

Prices of raw commodities vs prices of processed products

As we all are aware, mostly the prices of raw commodities (at farmer level) does not increase much whereas the prices of processed products (at consumer level) keep on rising and rarely comes down. It can be supported by the following data.

Crops	2015-16	2016-17	2017-18	2018-19	2019-20
Redgram (whole)	3,910	4,080	4,335	4,250	4,420
Redgram dal	12,607	15,147	11,345	11,634	12,700



Discussion question: As per the data given above, what inference we can draw for our FPO?

Opportunity for semi-finished products

There are also opportunities and potential for FPOs making semi-finished products like tomato puree, dried mangos, deshelled groundnut and supplying to final processing industry for making into tomato ketchup, mango pulp, refined groundnut oil respectively.

Post-harvest Losses

As it is commonly known, there is significant post-harvest losses of agricultural produce in our country. It was estimated at around Rs.92,651 crores¹ (2016), which is an enormous loss! Following is the estimate of per cent loss of different crops.

¹ <https://pib.gov.in/newsite/PrintRelease.aspx?relid=148566>

Category	% Range of post- harvest losses² (2016)
Fruits & Vegetables	4.58 – 15.88
Pulses	6.36 – 8.41
Cereals	4.65-5.99
Oilseeds	3.08 – 9.96

Processing and value addition is the most effective way to reduce the post-harvest losses and contribute towards food and nutritional security. The different value addition activities to reduce such losses are like the following.

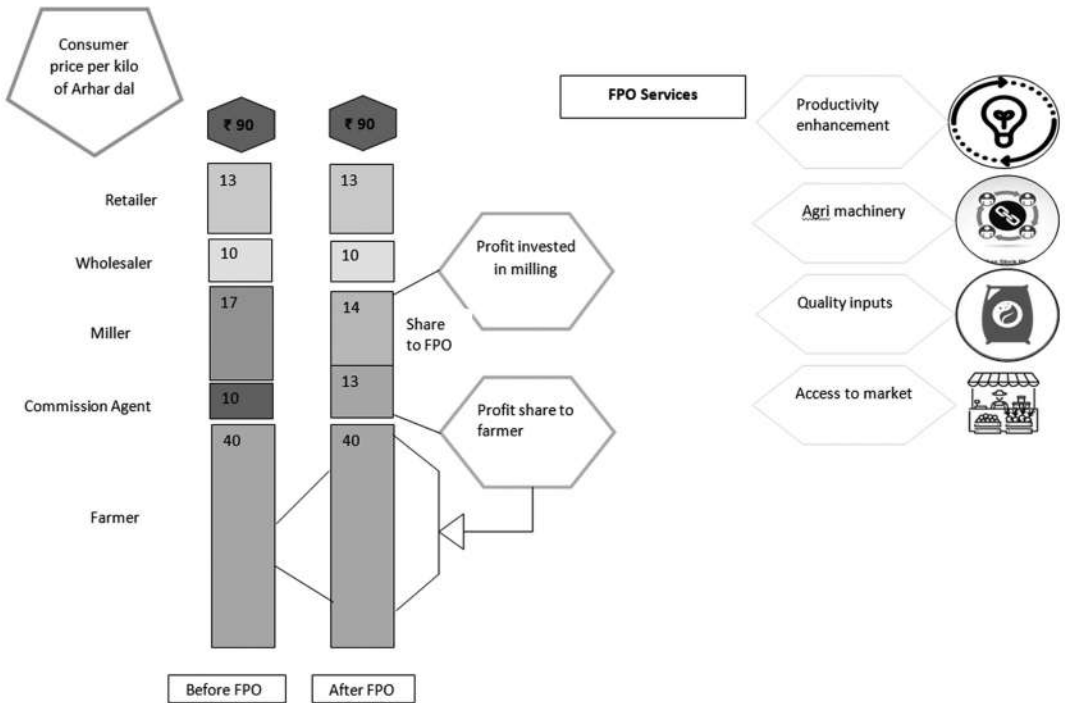
- » Proper harvesting and threshing techniques
- » Proper post-harvest handling
- » Proper storage management practices
- » Developing efficient product supply chain etc.

1.2 Share in the product value for farmer

As we all are aware, farmers generally receive low share in the total value of products which is disproportional to the investment, time and labour that they put in. However, with services of FPO, the share in the value to the farmer can go up significantly. This can be indicated by the following example of Arhar.

² <https://mofpi.nic.in/sites/default/files/selection.pdf.pdf>

Figure 1: Value addition through FPO services



Exercise: What can we infer from the above diagram?

There are two situations as shown in the diagram, one without FPO and another with FPO. In both situations, the price of Arhar dal at consumer level is same i.e. Rs.90 per kilo. However, without FPO, the farmer gets a share of only Rs.40 out of the consumer value of Rs.90. Remaining share in the consumer value is going to middlemen only.

However as the FPO can take up the functions of commission agent and

millers, these middlemen share of Rs.27 (Rs.10 + Rs.17) also comes to FPO and the FPO can pass on a part of it, say Rs.13 (as decided by the General Body) to the farmer thus increasing the share of the farmer to Rs.53 from Rs.40. As we can recall from Booklet 3 (*Vinimaya*, Membership in FPOs), such benefit goes to only active members who use the services of the FPO.

Apart from this, the FPO offer different services to their members. These include productivity enhancement, agri machinery, quality inputs and access to market.

Thus, from the above example, we can understand that processing and value addition by FPO is an important way to increase farmers share in the value of products.

FPO as Active Value Chain Player

*One key question to be addressed is **whether FPOs should be the active value chain players or just passive recipients of benefits in the value chain?***

As indicated in the previous Arhar dal example, so as to gain required share in the value in a sustainable manner and have control over their agricultural system, FPOs need to be active value chain players. In fact, this is required to realize actual benefits of collectivization!

It is in contrary to the situation of only others keep on playing major role in agricultural value chain activities and FPOs limited to the role of only aggregation and receiving disproportionately less share in the value.

Question: What can be the three ways in which our FPO can play an active role in the Value Chain of our commodities?

1. _____
2. _____
3. _____

This indicates that in any agricultural product, most of the value lies in post-harvest and not just in production and aggregation. Thus, FPOs can get into this space for more value realization for their farmers.

1.3 Benefits of value addition

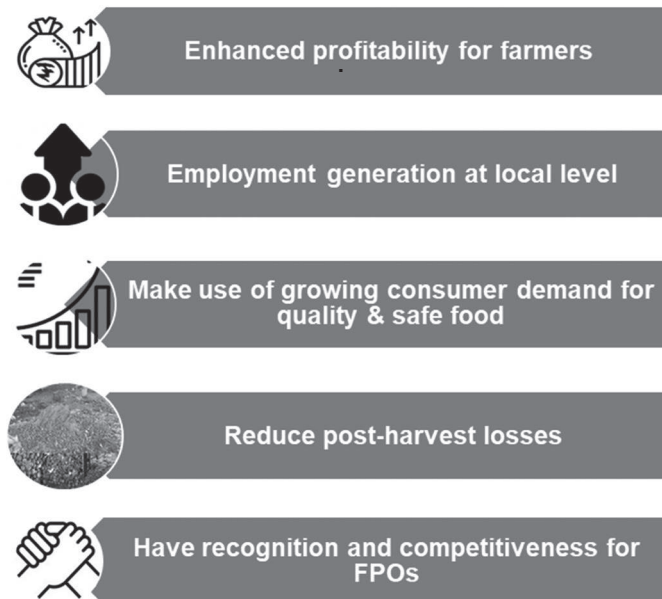
In the earlier examples, we have seen that with different value addition activities (for example, cleaning and grading) by FPOs, the profitability of farmers will go up. Also, different value addition activities by FPOs will create more employment at local as it require different workers (both casual and skilled).

Of late, in view of increased health consciousness and awareness, there is growing consumer demand for quality and safe food. For example, such food include pesticide residue free vegetables, organic products, cholesterol free products etc. Processing enhances quality and safety of agricultural products thus can be very effective to make use of this opportunity. There is also good export potential for such processed and safe products.

Exercise: Let's list down what can be the different benefits of value addition to our agricultural commodities.

Different benefits of value addition is summed up in following diagram.

Figure 2: Benefits of Value Addition



As indicated above, there are many benefits by value addition like more profitability for farmers, employment generation, make use of market opportunities, reduce post-harvest losses and competitiveness for FPOs.

Having understood the need of value addition and got convinced by it, let's get into the details of processing and value addition in next sessions.

As BoD members, we need to understand the need for value addition to the agricultural commodities thereby enhancing farmers share in the value and making our FPO as active value chain player.

PRIMARY PROCESSING

Session Objective



To identify different activities for primary (basic) processing of agricultural commodities

To know about Primary Processing Centre and it's setting up for FPOs

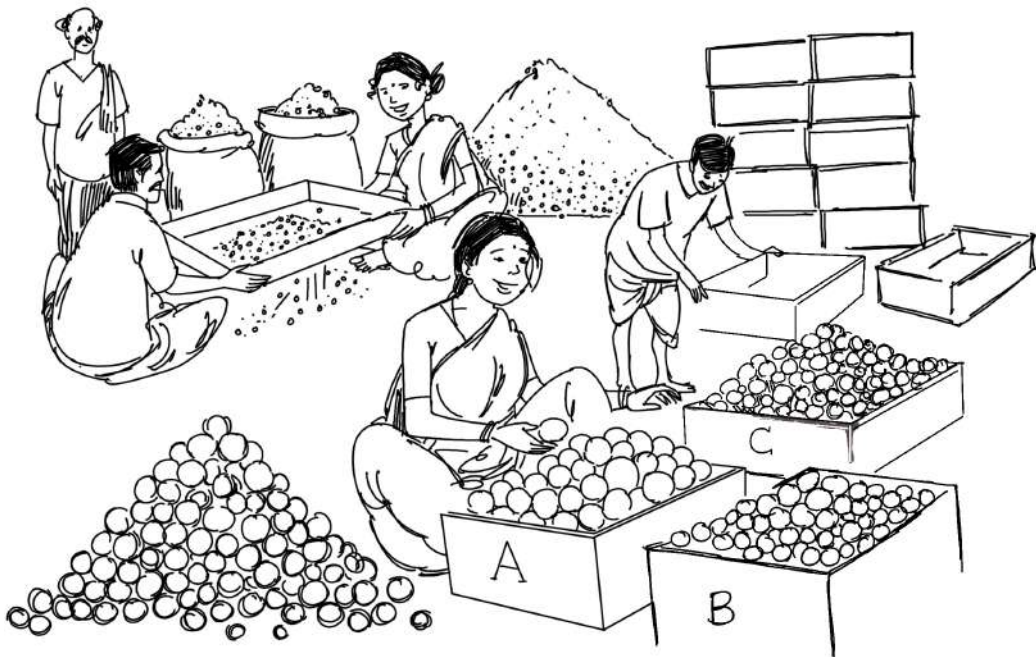
Key content items

1. Different ways of primary (basic) processing – cleaning, drying, grading, packing
2. Primary Processing Centre



Having dealt with need and importance of processing and value addition, are we set to get into primary processing?

As we all know, primary processing involve basic activities like cleaning, drying, grading and packing of agricultural produce so that they are ready for marketing. Primary processing is essential for any agricultural produce.



2.1 Primary Processing – Key Aspects & Benefits

The different aspects of primary processing are shown in the following diagram.

Figure 3: Primary processing activities



As shown in the above diagram, different primary processing activities need to be taken up for agricultural commodities. For example, in case of Maize, if it is not graded, then farmers are generally paid average price of Rs.1,200 per quintal for the entire produce. However, if it is graded, then most of the proportion can be of A grade which is sold in Government's Minimum Support Price of Rs.1,760 per quintal. The low grade Maize can be sold to poultry units. This can enhance the profitability even after deducting the processing cost of Rs.100 per quintal.

Another example: In the month of January 2020, Groundnut was selling in the Kurnool market between Rs. 4,400 per quintal and Rs. 5,450 per quintal; Rs. 5,000 per quintal on an average. 1 quintal of groundnut gives 70 kg of kernel approximately. So, 70 kg kernel would have costed Rs.5,000. But in the same month in Kurnool mandi groundnut kernel was sold between Rs.7,100 to Rs.8,100 per quintal. In addition, after deshelling the kernel,

if they were cleaned and graded to HPS (Hand Picked Selection quality which is used for table purpose), prices in the same market varied between Rs.12,500 to Rs.15,000 per quintal. Converting regular groundnut into HPS quality requires primary processing like strict cleaning and grading only.

Exercise: Let's list down three important agricultural commodities in our FPO area. For each commodity, let's list the required primary processing activities and also the value addition in view of these primary processing activities.

S. No.	Commodity	Price (before processing)	Required primary processing activities	Cost of processing	Price (after processing)
1					
2					
3					

2.2 Primary Processing in Krishi FPO

CASE

Krishi Farmer Producer Company Limited (Krishi FPC)

Background

Krishi Farmer Producer Company Limited (Krishi FPC) is formed three years ago and is located in Siripur, which is the block headquarters. Siripur is well connected by a pucca motorable road to the district headquarters of Vijaynagar on one side at 40 km distance. On the other

side, it is connected to Rajapet, a big trade & business town at just 30 km away. A metro city is located at a distance of 190 km from Siripur and connected by a national highway from the district headquarters.

Agriculture Scenario

This area, just like any other rural area of our country, is mostly agrarian with few dependent on services. Even if two-thirds of the land is rainfed area, there is some irrigated area as well with sources of tanks and borewells. Many farmers with little irrigation facility have adopted drip/ sprinkler irrigation system with active support from government departments.

Traditionally, groundnut (mostly in kharif and to some extent in rabi also under irrigated condition) and Arhar (redgram) (kharif) are the main crops cultivated in the area. The FPC area is also known for vegetables (mostly bhendi, chilli, brinjal and gourds and few other vegetables like beans, tomato etc.) cultivation. Of late, farmers in the area are also taking up the millets of ragi (finger millet) and korra (foxtail millet) in view of increasing demand.

Membership and Governance

There are 900 shareholder members in the FPC who are mostly small & marginal farmers. These members are from 16 villages located closely to each other in compact manner. The FPC is run by a Board of 12 committed, entrepreneurial directors including 5 women. Apart from these 12 regular Directors, there are following three Independent Directors in this FPC.

Ms. Lakshmi, a senior Bank Manager dealing in agricultural finance.

Mr. Sitaram, an agri-business specialist having extensive experience in both agri-produce marketing and input supply.

Mr. Swaminath, a retired official from Department of Agriculture, State Government, having extensive experience and expertise on technical aspects of agricultural production.

The Board is chaired by Mr. Ramaiah. Mr. Ramaiah is a highly respected person having extensive farming experience and concern for the welfare of farmers in the area. He is also known for resolving many conflicts/ issues in that area.

Management

The Board also appointed Mr. Ganesh as the Manager and Ms. Durga as the Accountant for their FPC. Mr. Ganesh mainly looks after business activities of the FPC whereas Ms. Durga takes care accounting & bookkeeping, administration and legal compliances. Both of them are working actively in the FPC for last two years.

The FPC has their office cum Farmers Service Centre (FSC) in Siripur. In this building, apart from a small office room, there is space for FSC, a small meeting hall in which they generally conduct their Board meetings and monthly review meetings. This also has a small storage facility in which different input items, some equipment etc. are kept. The FPC office is well furnished with required furniture, a computer, internet and telephone facility.

The FPC has taken necessary organizational licenses of PAN card and GST registration and also business licenses of inputs (seed, fertilizer and pesticides), market, shops & establishments.

Business Activities

Currently, the FPC is taking up input supply and marketing activities for their members. For taking up these activities, the FPC has also taken a working capital loan of Rs.10 lakhs (cumulatively) over last two years.

They are engaged in collective buying of required inputs for their members. The FPC also keep some equipment like tarpaulins, power weeders, sprayers etc. for use by their members. The FPC is also taking up collective marketing of agricultural produce of their members.

However, currently these activities are being taken up at low scale only and the Board is determined to take all required services to all members from next season onwards.

Membership in Federation

The FPO has also taken membership in Jaikisan FPO Federation by paying a share capital of Rs.50,000. This is a cluster level federation formed one year ago and located in Rajapet. In fact, the Krishi FPO itself is one of the promoting agencies of this Federation! The other members in Jaikisan FPO Federation are Dharani, Vasundhara, Prithvi and Sasya FPOs. As we can recall from Module, Vipani (Marketing by FPOs), Krishi FPO is engaged in procurement of groundnut, redgram and also vegetables from their members. Now, let's see how this FPO took up required primary processing activities.

At farmer level

Most of the basic processing activities, particularly cleaning and drying, have to happen at farmer level only. The Marketing sub-committee, appointed by the FPO Board, through the FPO Director in each village, have taken up continuous member education on the need of taking up these activities and bring quality produce to FPO. Krishi FPO also supported those activities at member level by provision of required material like tarpaulins, packing material from it's Farmers Service Centre and machinery for proper harvesting, threshing, drying etc from it's agricultural machinery centre.

FPO level

Activities of cleaning and drying are preferably not done at FPO level as the quantities are very high at FPO level and also the costs. Grading has to be done at FPO level during procurement based quality grades for each commodity. Often times, FPO has to do repacking into specific packs (like crates for tomato, artificial jute bags for seed, gunny bags for grains) as labelling, storage and transportation have to be done. The Marketing sub-committee also arranged four workers at their procurement centre for grading and packing of the produce.

From the above case, it can be known that it is the important responsibility of Marketing sub-committee of FPO to ensure necessary grading and packing activities at FPO level. The sub-committee also needs to ensure the required member education so that they clean and dry the produce at their level and bring quality produce for procurement.

2.3 Primary Processing Centre

As Krishi FPO area and also surrounding areas have vegetables cultivation, the FPO got into collective marketing of vegetables and supply to a corporate retail buyer. These details are already given in Vipani, the Marketing module. However, in view of lack of procurement facility at local level, the FPO is not able to scale up the vegetables procurement to more members and also not able to meet the demand of the buyers. In view of this, the BoD members of Krishi FPO asked their Manager Ganesh to go to the district headquarters of Vijaynagar and study a primary processing centre. Ganesh visited Vijaynagar, studied the primary processing centre and presented to the Board the following details.

A primary processing centre consists of required facilities for aggregation, cleaning, sorting and grading of vegetables. The primary processing centre will have entire basic requirements for supplying the produce to major buyers.

Considering procurement opportunities from the farmers in Krishi FPO operational areas and also surrounding areas, the daily procurement and supply of the all vegetables is estimated between 10-15 tons per day. The required land for setting up of a primary processing centre needs to be taken on lease for 15 years.

Following is the estimated investment for a primary processing centre.

S. No.	Item		Estimated Cost (Rs.)
1	Shed and platform		11,00,000
2	Plastic Crates	 <p>Crate 60x40x26 cm</p>	1,25,000
3	Grading Table		55,000

4	Wooden Pallets (New Hard Wood Pallet 48" X 40" X 4-1/2" - Four way entry pallets)		35,000
5	Hand pallet truck (2 Ton capacity)		25,000
6	Silpaulin Sheet (Washing Sheets – HDPE)(of Plastic not less than 5' Length and 2 6" Ft width)		35,000
7	Weighing Platform Scale (300 Kg Capacity)		25,000

8	Other assets- Small office table, three chairs, almirah, Wooden showels	1,50,000
9	Electrical Supply & Transformer	50,000
	Total	16,00,000

After the presentation, the BoD members of Krishi FPO got convinced for the need of setting up of a primary processing centre. They handed over this task to the BoD Sub-committee.

So, let's also assess the need for a primary processing centre for our FPO as well. It can be noted that with just some additions (of gunny bags, moisture meter, grain cleaner etc.), this facility can be used for staple crops also like paddy, maize, redgram, bengalgram etc.

As BoD members, we need to ensure the following activities to set up primary processing centre.

- » *Make the estimate of arrivals of different commodities*
- » *Getting required finance (sources like banks, schemes of horticulture department etc.)*
- » *Take required land on lease*
- » *Get detailed estimates*
- » *Set up the primary processing centre*

VALUE ADDITION THROUGH SECONDARY PROCESSING

Session Objective



To realize the extent of value addition to agricultural products through secondary (advanced) processing

To know about types of value addition and value addition at different levels of FPOs

Key content items

1. Value addition through secondary (advanced) processing
2. Types of value addition
3. Processing of agricultural commodities into products for use by consumers
4. Processing activities at different levels of farmer, FPO and Federation



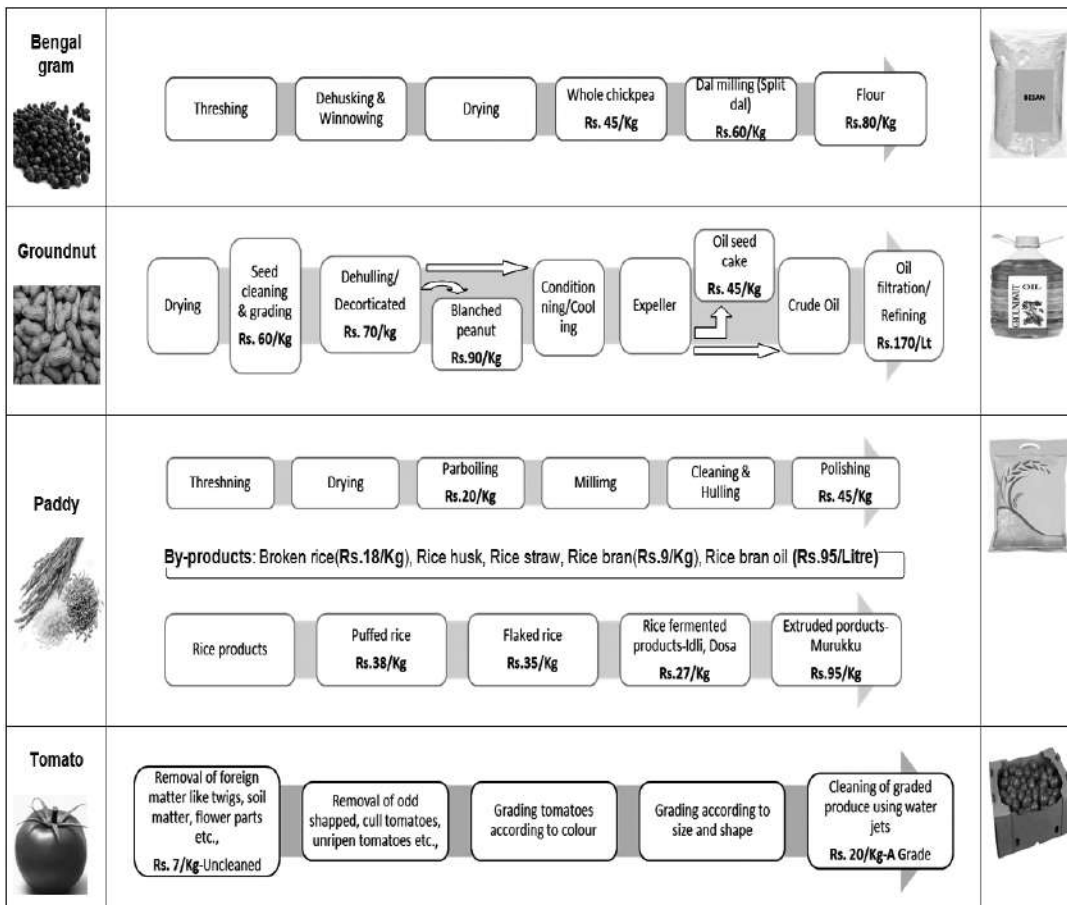
While the primary processing involve primary activities of cleaning, drying, grading and packing, there can be secondary processing also for more value addition to agricultural produce. The secondary processing involve activities of converting the commodities into more useful products (like dal, atta, oil etc.) for consumption and also more value getting by activities of storage (for better price realization) and transportation (to areas of more demand).

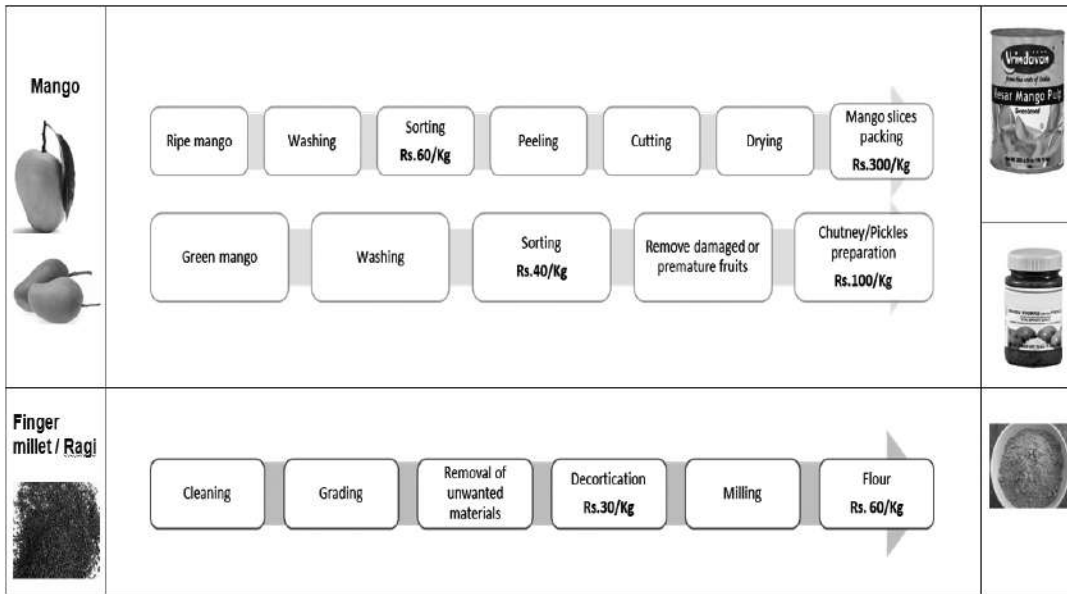


3.1 Value Addition through Secondary Processing

As we see many agricultural commodities can't be used for consumption in raw form. So, there is lot of difference between what the consumers need for their consumption and the raw commodity. In between, there can be some intermediate products also. FPOs can fill this gap between producer and consumer by getting into different secondary processing activities. Some examples of different commodities and value addition through secondary processing are shown below.

Figure 4: Value Addition through Secondary Processing





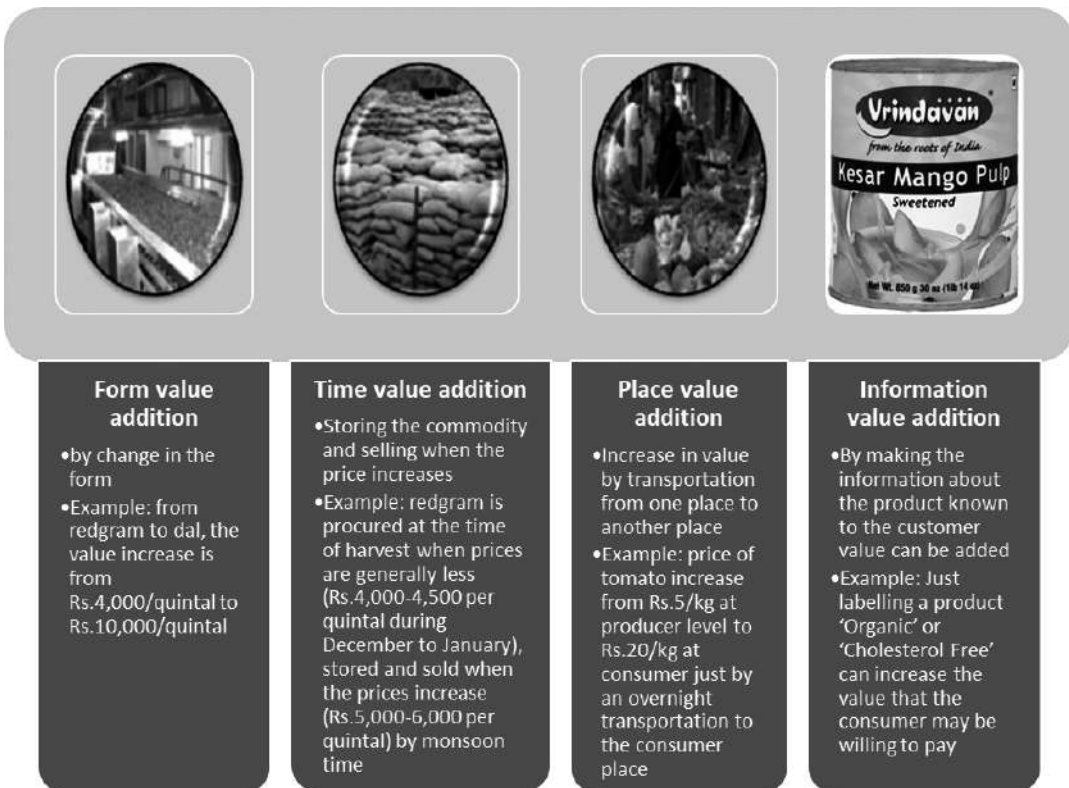
3.2 Types of Value Addition

In secondary processing, value addition to agricultural products mainly happen by four ways – form value addition, time value addition, place value addition and information value addition.

Value can be increased by a combination of the above also – for example, procurement of redgram during December-January, make into dal, store till, say June, label it, transport to a near-by urban place and sell.



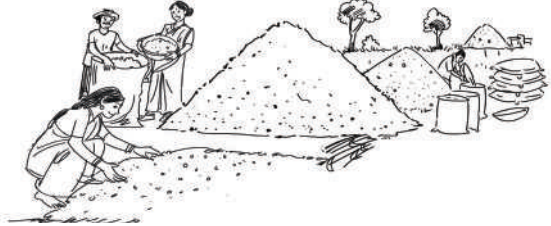
The different types of value addition is depicted in following diagram.

Figure 5: Types of Value Addition



3.3 Processing activities at different levels

Different value addition activities have to be taken up at different levels as shown in the following diagram.

<p>FPO Federation</p>	<p>Milling, Warehouse, Product Distribution, Labelling & Branding</p>	
<p>Primary FPO</p>	<p>Grading, Packing, Local Transportation</p>	
<p>Farmer</p>	<p>Cleaning, Drying, Basic Packing</p>	

The different activities of value addition have to be taken up at different levels. As we have seen earlier, value addition activities like cleaning, drying and basic packing have to be taken up at farmer level only.

Now, let's take the activities like grading, packing and local transportation. These activities are primary in nature and can be taken up at low volumes also. Thus, these activities can be taken up at the level of primary FPOs (like Krishi, Dharani, Vasundhara etc. in above case).

Now, let's look at activities like dal mill, oil mill, warehouse, semi-products (like fruit pulp) making, product distribution to markets etc. which are higher level activities. These activities require some level of operation below which it is neither economically viable nor technically feasible to be taken up. For example, for a dal mill, a capacity of 2 tons per hour, for a warehouse, a

capacity of 500 tons etc. Thus, these activities require more business volume or raw material requirement which is very difficult at a primary FPO level.

Also, such kind of higher level activities require specialized packing, labelling and branding which again require high volume and investment. Thus, such activities need to be taken up at the level of Federation of primary FPOs like Jaikisan Federation, which can have required raw material, business volume and technical feasibility.

However, if an FPO is big enough with high number of members (say 3000-5000) and raw material availability, then these activities can be taken up at single FPO level itself.

*To sum up, generally **primary processing needs to be taken up at primary FPO level and secondary processing needs to be taken up at FPO Federation or big FPO level.*** It is very important to ensure taking up value addition activities at appropriate level only so as to be profitable and feasible.

We will look into each of the secondary value additions, in detail, in coming sections. To know more about these aspects, let's go to Jaikisan FPO Federation, Rajapet!

3.4 Jaikisan FPO Federation

Let's recall from the booklet 2, Parikalpana that FPOs can form into their Federation. This means that just like individual farmers can form into their FPO by taking membership in it, so like FPOs can form into their Federation by taking membership in it. Jaikisan FPO Federation is formed like that and it's profile is given below.

JAIKISAN FPO FEDERATION PRODUCER COMPANY LIMITED, RAJAPET

Jaikisan FPO Federation is formed two years ago initially with 3 FPOs of Krishi, Dharani and Vasundhara and later 2 more FPOs of Prithvi and Sasya joined the Federation. Each FPO paid a share capital of Rs.50,000 in the Federation. Rajapet is centrally located and well connected by road to all member FPO areas.

The five FPO members of the Federation are located contiguously in a compact manner. Also, the agricultural situation and cropping pattern are similar in operational area of these FPOs.

Following are the details of member FPOs of Jaikisan Federation.

Name of the FPO	No. of members	Major crops	Business activities
Krishi FPO	900	Groundnut, Redgram, Vegetables, Ragi, Korra	Input supply, Agricultural machinery, Seed production & supply, Marketing of produce, Primary Processing Centre
Dharani FPO	700	Redgram, Bengalgram, Chilli, Onion, Cotton	Input supply, Agricultural machinery, Marketing of produce
Vasundhara Women FPO	800	Groundnut, Redgram, Vegetables, Ragi, Korra	Input supply, Seed production & supply, Marketing of produce, Primary Processing Centre

Prithvi FPO	850	Paddy, Redgram, Greengram, Cotton	Input supply, Marketing of produce
Sasya FPO	650	Maize, Paddy, Bengalgram	Input supply, Agricultural machinery

The Board of Jaikisan Federation has 15 Directors – 3 each from Krishi and Prithvi FPO areas; 2 each from other 3 FPOs and 3 Independent Directors. Each Chairperson of member FPOs is elected as Chairperson of the Federation for one year on rotation basis.

There are a total of 3900 members in these 5 FPOs. Vasundhara FPO is all women farmers FPO. Jaikisan Federation has 4 staff – Chief Executive Officer, Marketing Manager, Accountant and an Agriculture Expert.

The member FPOs of Jaikisan Federation are very active and taking up different business activities. They have full trust and ownership in their Federation and take pride in that. They hope to take up many required activities at higher level for the overall benefit of farming community in that area.

Till now, we have seen the basic profile of Jaikisan Federation. Now, let's get into the details of their activities.

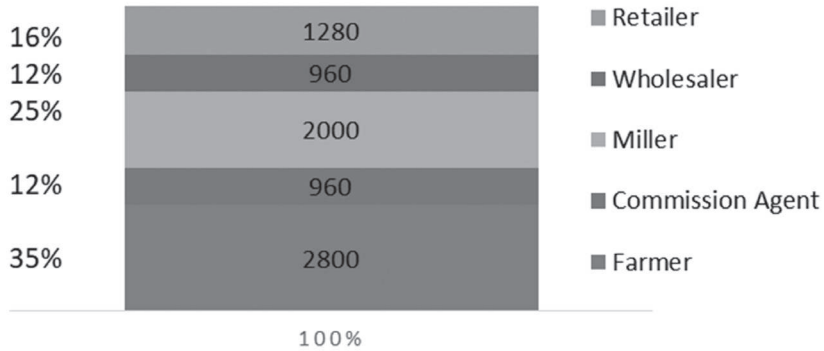


The Background

As given in the profile of Jaikisan Federation, pulses of Redgram, Bengalgram and Greengram are major crops for more than half of the members. However, these farmers are facing many constraints, particularly after harvest of these crops. The Board of Jaikisan Federation seriously discussed about these constraints in many sittings.

The member FPOs expressed their concern that even though they are taking up collective marketing of pulses to some extent, the sale price margin for them is not much. Many times, it is just Rs.5,000 per quintal and there is wide price fluctuations for these commodities.

BREAK-UP OF ARHAR DAL VALUE (OF RS.8000 PER QUINTAL AT CONSUMER LEVEL) AMONG DIFFERENT FUNCTIONARIES



The expert Directors and Marketing Manager of the Federation added that much margin is going to others like millers and traders than farmers. Farmer is receiving disproportionately less share (only 35%) in the total value of arhar dal compared to the time, labour and investment they put in as shown below. The total value of arhar dal paid by the consumer is Rs.8,000 per quintal.

As BoD members, we need to ensure required member education so that they take up required cleaning and drying of their agricultural produce and appropriate activities are taken up at different levels of FPOs.

MILLING – Form Value Addition

Session Objective



To realize the extent of value addition to agricultural products through secondary (advanced) processing

To know about processing of agricultural commodities into value added products for use by consumers

Key content items

1. Form value addition through secondary (advanced) processing
2. Feasibility for value addition
3. Value vs cost



The Dal Mill Idea

For Jaikisan FPO Federation, for long, there has been idea of having own dal mill and it came up in many Board meetings of member FPOs and the Federation. However this time, the Board of Jaikisan decided to look into this matter more seriously.

The Board of the Jaikisan Federation very quickly appointed a Sub-committee to look into the matter of having own dal mill. The Sub-committee comprises of 3 Board members (including one Expert Director) and the Marketing Manager. The committee visited many places like Vijaynagar, dal mill cluster in neighbouring state, major dal markets etc. They interacted with millers, wholesalers, district industries officer, banker, technical experts, Engineer in Panchayat Raj Department and few retail buyers as well.

The dal mill cluster developed in a special industrial zone in the neighbouring state is very remarkable success. On suggestion of many persons, the Board members and staff of the Federation along with representatives of their member FPOs visited this cluster and got highly motivated.

To start with, they made initial feasibility assessment for setting up a dal mill, the details of which is presented in Annexure 1.

4.1 Dal Mill: The Next Steps

As there is both benefit for members and feasibility for a dal mill, the Board of Jaikisan Federation got more excited about the project. However, the Board is still not fully sure of the technical details of setting up and operation of a dal mill. Thankfully, the Expert Director of the Federation brought a timely and needful lead of a technical agency to study the dal mill project in detail.

The technical agency situated in the nearby metro city is an expert agency in such food related projects formulation and implementation. Apart from technical expertise, the agency can also look into the financial aspect of projects and develop bankable project proposals to access the required finance. Impressed by the expertise of the technical agency, the Board of Jaikisan Federation decided to engage them to study and prepare a detailed project report for the dal mill.

After 3 months, it was another exciting meeting for the Board of Jaikisan Federation. A long wait for the Board, indeed! The technical agency is ready with the detailed project report and presentation to the Board! In fact, apart from the Board members of the Federation, there were staff, other representatives of member FPOs, staff and other experienced persons in the meeting.



The different discussed aspects of the dal mill project are presented in Annexure 2.

Own processing vs job work

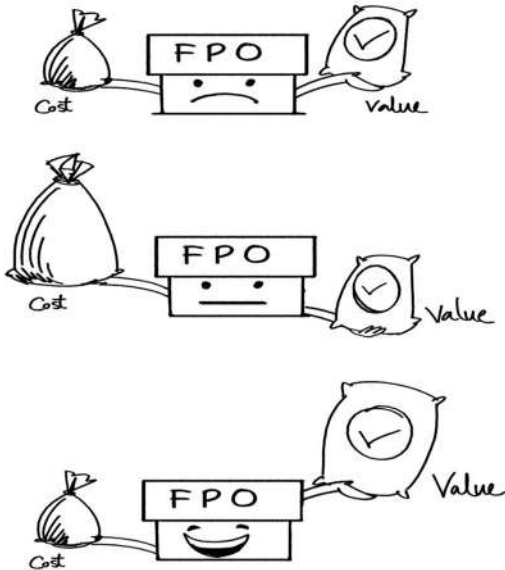
There are dal mills in the district headquarters of Vijaynagar. However, to get the pulses processed as job work in dal mills of Vijaynagar, following are the constraints.

- » High transportation cost
- » No guarantee of availability of processing facility in required time
- » Quality loss and weight loss

Per quintal profitability analysis of own processing and job work for red gram is presented below. As the data indicates, the profit margin is higher in own processing than the job work.

Red gram profitability (Rs. per quintal)			
S.No.	Particular	Own Processing	Job work
1	Raw material cost	4500	4500
2	Processing cost	300	800
3	Total cost	4800	5100
4	Selling price	6500	6300
	Profit	1700	1000

Value vs Cost



It has to be kept in mind that any value addition always incur some cost. It is like in the above case, for converting one quintal of redgram into dal, it costs Rs.300. That means, no cost - no value addition. What if the cost incurred is more than the value added? Obviously, it would be loss for the FPO.

Thus, it is very important to always ensure ***that the value added is much more than the cost incurred*** so that there is net profit. For example, in above case, as against Rs.300 cost of value addition, the additional value added is Rs.2000 (selling price of 6500 minus raw material cost of Rs.4500).

Dal Mill: The Way Forward

It was a long and tiring day of presentation by the technical agency and in-depth discussions on it! As the idea of having own dal mill has been in discussion for over a year, the Board of Jaikisan Federation wants to bring it to some conclusion soon. The Board members and others in the meeting got excited and convinced for setting up of a dal mill for their FPO. They eagerly look forward to their own dal mill – a dream to come reality, indeed!

Summing-up

To sum-up the dal mill case of Jaikisan Federation, the key aspects of dal mill business model is presented below.

Key Aspects of Dal Mill Business Model

Compact area of raw material availability – so as to minimise the raw material procurement cost.

Multi commodities – so as to maximize the capacity utilization and engage for longer time in a year.

Job work for others so as to be engaged more time in a year.

Capacity utilization – ensuring maximum capacity utilization so as to be profitable.

Product outturn – ensuring the required product outturn through quality of raw material and efficient operation of the dal mill.

Exercise: Having seen the dal mill case of Jaikisan FPO Federation, let's list down what inferences we can draw from it.

Assignment: Based on the discussion in this session, let's work out the processing requirements for different commodities of our FPO.

Commodity	Required primary processing	Required secondary processing

Key takeaways for BoD members

- » *Getting the feasibility assessment for the business*
- » *Getting details of the business, it's profitability etc.*
- » *Ensuring that the value added is more than the costs incurred in adding the value*

STORAGE – Time Value Addition

Session Objective

To identify the need and benefits of storage for business activities of FPO

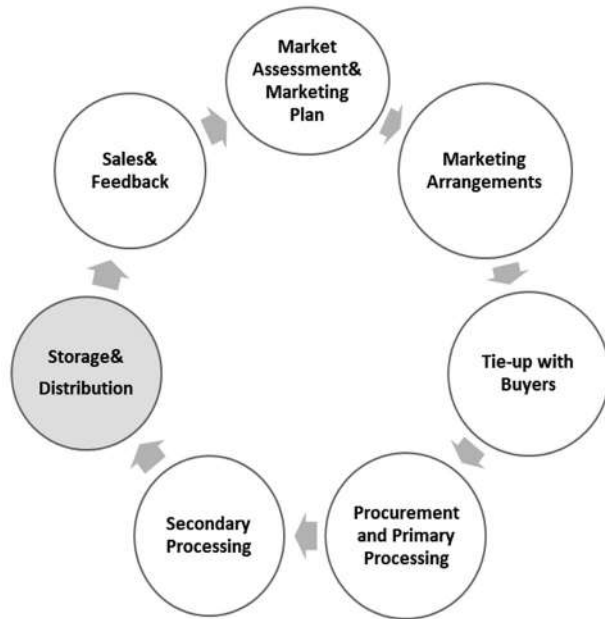
To understand different aspects of feasibility of warehouse



To know about different linkages required for setting up and running warehouse

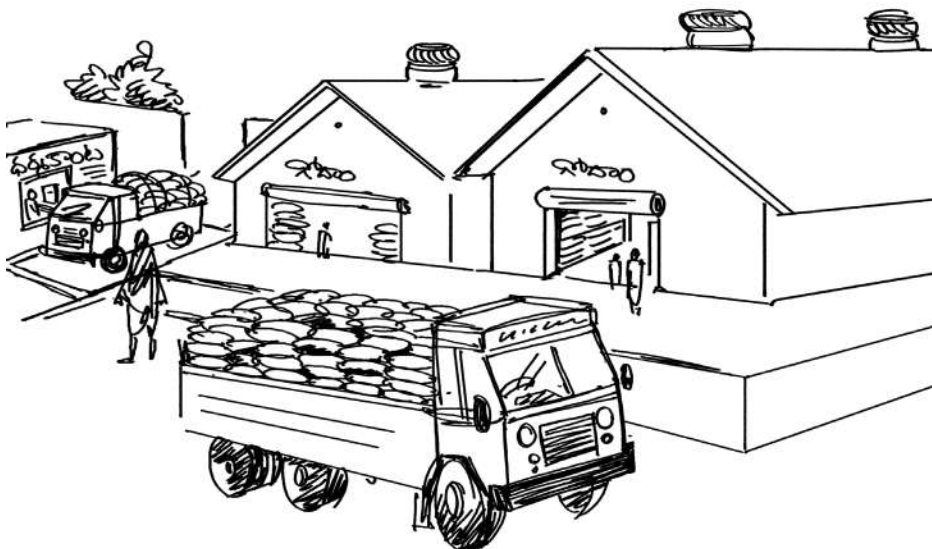
Key content items

1. Need, benefits and feasibility of warehouse
2. Key aspects of warehouse business
3. Linkages for warehouse



Introduction

Storage is an important marketing function, which involves holding and preserving agricultural commodities from the time they are produced until they are marketed. While after procurement and processing, some of the products may be directly sent for sale, often times storage is required to take many advantages.



Exercise: Let's list down what can be different advantages of storage facility.

As we have seen, storage has different advantages like the following.

- » Almost all agricultural commodity prices are lowest during its harvesting season. But as time passes by prices increase. Often farmers are forced to sell their produce at a low price to meet the expenses of the forthcoming crop, pay back some of the old debts. This is where the FPO can increase the return to the members by storing the products till the prices go up.
- » Some of the products like redgram dal have a seasonal demand during festivals/ monsoon season etc. rather than at the time of harvest. In February 2015, prices of Arhar had come down close to Rs. 100/kg, while by November 2015, it went up to Rs. 175/kg. but by February 2016 prices again came down to Rs. 144/kg. Storage ensures to make use of such demand seasons by preserving the product and thus gaining time value.
- » Storage is necessary for some period for performance of other marketing functions like input supply, seed storage etc.
- » Storage facilities ensure competitive advantage through enhanced ability to hold the stock.

Thus, storage of agricultural commodities and also inputs is an important function in marketing. Storage facility is a competitive advantage and enables marketing to be more effective for any business organization.

While some storage can be done in local godowns, it can be temporary only and may not be fool proof. So as to meet the scaled up requirements of many

members and reap the advantage of scientific storage, proper warehouse is required.

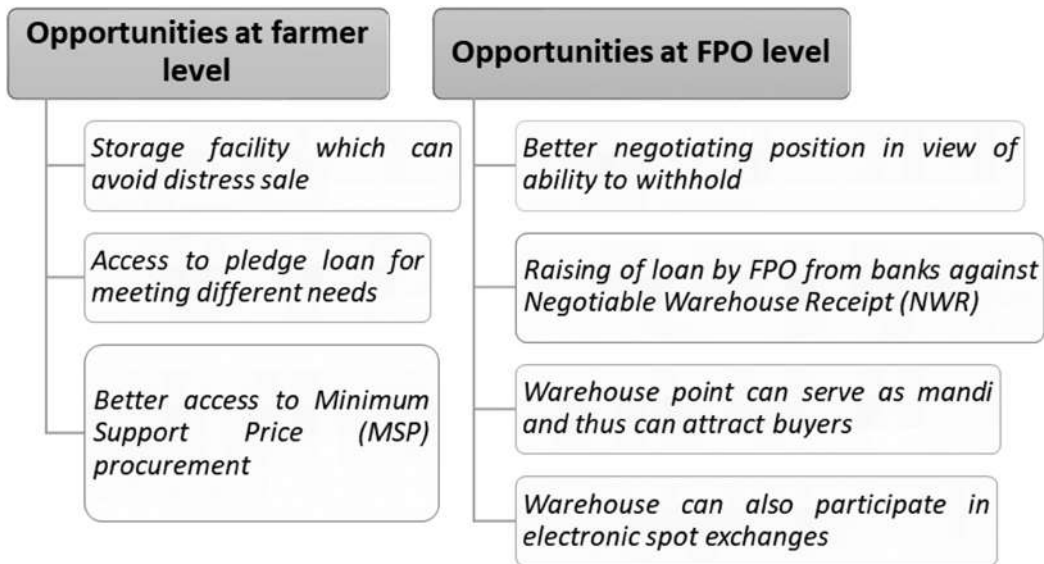
To know more about storage, let's get back to Jaikisan FPO Federation.

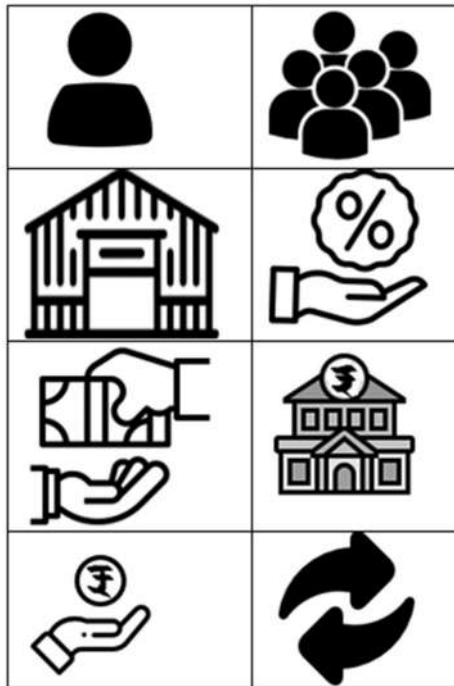
5.1 Benefits and Opportunities by Warehouse

After visiting few warehouses and interacting with different concerned persons, the Jaikisan Federation Marketing sub-committee realized that there are many benefits of a warehouse. The direct benefit of warehouse is that it can enable the FPO to take up business of procurement, processing and input supply. By virtue of ability to withhold stock, the FPO can expand these business activities and thus will be able to serve more number of members.

Also, having a warehouse opens up many opportunities as well.

Figure 6: Opportunities by Warehouse





As indicated above, having a warehouse will open up the opportunities of storage facility, access to loans and Minimum Support Price (MSP) procurement for farmers. The opportunities for FPO include better negotiation position, bank loans, attract buyers and participation in electronic spot exchanges (electronic trading platform for commodities).

Negotiable Warehouse Receipt / परक्राम्य भंडागार रसीद

FORM A
प्रारूप क

See section 11 of the Warehousing Development and Regulation Act, 2007
भंडागार (विकास और विनियम) अधिनियम, 2007 की धारा 11 देखिए

Name and Location of Warehouse / भंडागार का नाम और स्थान

1. Receipt Number / रसीद संख्या : Dated / तारीख :

2. Name & complete postal address of Warehouse / भंडागार का नाम और पूरा पता :

3. Warehouse Registration No. / भंडागार की पंजीकरण संख्या : Valid up to / तक मान्य :

4. Received from (Name and address of the depositor) / जिससे स्टोक प्राप्त किया (अग्राहकों का नाम एवं पता) :

5. Goods of following descriptions : प्राप्त की गई वस्तुओं का विवरण :

Commodity वस्तु	Description of Commodity, with quality/grade etc. गुणवत्ता एवं ग्रेड इत्यादि सहित वस्तु का विवरण	No. of Packages/bags पैकेजों / बोरो की संख्या	Net Quantity in MTs/Qtls मी. टन / क्विंटल में कुल मात्रा	Market value at the time of deposit अमा के समय बाजार दर	Total Market Value कुल बाजार मूल्य	Godown / Stack Number गोदाम / चट्टा संख्या

6. Private marks of the depositor on the packages, if any / पैकेजों पर अग्राहकों का निजी चिह्न, यदि कोई हो :

7. Rate of storage and handling charges / भंडागार दर एवं रख-रखाव प्रभार :

8. Insured for fire, floods, theft, burglary, misappropriation, riots, strikes or terrorism / अग्न, बाढ़, चोरी, सैधारी, हेरकमी, डकैत-फसद या आतंकवाद आदि के लिए बीमा :

Name of the Insurance policy बीमा पॉलिसी का नाम	Policy No. पॉलिसी संख्या	Insured for the amount of Rs. बीमा धनराशि	Period of validity मान्य अवधि		Name of the Insurance company बीमा कंपनी का नाम
			From से	To तक	

10. The goods are accepted for storage from date / भंडागार के लिए माल की स्वीकृति : to / तक :

11. The receipt is valid up to / यह रसीद तारीख : being the date of expiry of the declared shelf-life. तक वैध है क्योंकि इसी दिनांक तक घोषित शेल्फ-लाइफ है।

Name and Signature of Warehouseman / भंडागार / प्राधिकृत अधिकारी का नाम एवं हस्ताक्षर
authorized official with seal
Tel. No.



Need for Warehouse

The Jaikisan Federation and their member FPOs have been actively taking up procurement and marketing activities for last two years. However, they face the following constraints with regard to storage.

There is no proper warehouse near the FPO operational area. The nearest warehouse is a state warehousing corporation warehouse located in Vijaynagar at a distance of 40 km. In view of this distance, the cost of transportation is high. Even then, last year the Federation tried their best to get some space in this warehouse for rent. However, in view of peak demand, the space was not available. In view of this, the Federation had to sell their redgram dal at lower price of Rs.5,500 per quintal whereas in just 3 months from that time, the price went up to Rs.6,500 per quintal.

Whereas the member FPOs hired some local godowns for storage. But in view of old buildings without proper arrangements of flooring, roof etc., there is pest attack and moisture infiltration leading to deterioration of quality and thus price of the stock has gone down. In view of poor facilities, these godowns are also not eligible for insurance and bank finance.

The feasibility for the warehouse is presented in Annexure 3.

WAREHOUSE PROPOSAL OF JAIKISAN FPO

In view of the throughout business requirement and feasibility, the Board of the Jaikisan Federation decided to have their own warehouse.

The Board formed a committee with the expert director, a Board member and the CEO to explore into the possibility of constructing their own warehouse. The committee visited the warehouse of State Warehouse Corporation in the district headquarters, had discussions with the warehouse manager and engineer. They visited a private warehouse located at the outskirts of Vijaynagar and met their collateral management persons. They also consulted other experts like Agricultural Marketing Committee Secretary, Bank Manager etc.

5.2 Key Aspects of Warehouse Business

Based on the above background on warehouse, let's discuss and write down what Jaikisan FPO needs to do for following aspects.

1. ***Whether the FPO should have it's own warehouse or access the other warehouse?***

2. ***What should be the location of the warehouse?***

3. ***What should be the storage capacity of the warehouse?***

4. ***Whether the warehouse has to be put for single use or multiple use?***

5. ***Whether warehouse is only cost centre or it can be revenue source also?***

The committee members of the Federation looked into the warehouse business more deeply. They came known that for effective planning and implementation of warehouse business, different aspects have to be taken care. They tried to attempt the above different questions so as to identify some important aspects of warehouse business.

Table 1: Key Aspects of Warehouse Business

<p>1</p>	<p><i>Whether the FPO should have it's own warehouse or access the other warehouse?</i></p>	<p>As mentioned above, there are no available warehouse facilities near to the FPO. Even if few are present, they are not available in required time and in a consistent manner so that the business of the FPO do not get interrupted. That is why farmers in these FPO areas generally sell off their produce immediately after harvest even if the prices are low.</p> <p>So, the Jaikisan Federation thought it can have it's own warehouse as there is also feasibility for it.</p>
<p>2</p>	<p><i>What should be the location of the warehouse?</i></p>	<p>The Jaikisan Federation close to locate the warehouse at Siripur. This is in view that it is the centre point for all member FPOs and most of the procurement and processing happen near to this location. As indicated in the map, Siripur is also connected to a main road for reaching out to market places and have good transportation facilities.</p>
<p>3</p>	<p><i>What should be the storage capacity of the warehouse?</i></p>	<p>As indicated in the storage quantities Table above, at any point of time, minimum of 1,000 tons of stock has to be stored. So, 1000 tons can be the storage requirement of the warehouse. Even if more quantity arrive, better to start with 1,000 tons and expandable to more capacity later. As per warehouse market also, 1,000 tons is the minimum viable capacity in these kinds of areas.</p>

4	<i>Whether the warehouse has to be put for single use or multiple use?</i>	Also as indicated above, the warehouse can be put for multiple activities of the FPO like procurement & marketing, storing of it's processed products and also for seed and other inputs. Apart from these FPO activities, there is lot of demand for storage on rent basis by both individual farmers in the FPOs operational area and also by other agencies. These kind of multiple use ensure optimal and full time utilization of the warehouse so that it is more profitable.
5	<i>Whether warehouse is only cost centre or it can be revenue source also?</i>	As the warehouse is put for the use not only for FPO activities but also to rent out to individual farmers and other agencies, it generates revenue for the FPO. So, warehouse can be a revenue source also for the Federation.

5.3 Warehouse Business Plan Summary

After the initial studies and consultations, the CEO of Jaikisan Federation and the Expert Director prepared business plan for the warehouse. The detailed business plan is discussed in sub-committee and following summary is made.

Table 2: Warehouse Business Plan Summary (Rs. lakhs)


S. No.	COST	YEAR 0	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
	CAPITAL COST						
1	Land	5.00					
2	Building	119.00					
3	Furniture and fittings	1.00					
4	Plant and machinery	3.00					
5	Pre-operative expenses	2.00					
	Total	130.00					
6	Operational Cost		24.68	25.17	25.75	25.03	24.41
7	GROSS INCOME		31.50	33.08	34.73	36.47	38.29
8	NET INCOME		6.82	7.91	8.97	11.44	13.88


The business plan indicates the profitability of this business. The details of capital (warehouse setup) costs and operational costs of warehouse are given in Annexure 4.

5.4 Necessary Linkages for Warehouse

The independent director of Jaikisan FPO Federation also informed that there are different agencies to regulate/ give services for warehouse functioning in the country. The Federation can make use of such linkages for required support to their warehouse from time to time. These are given in the following table.

Table 3: Linkages for Warehouse

S. No.	Authority/ Agency	Purpose
1	Warehousing (Development and Regulation) Act, 2007	Overall regulation of warehouses in the country
2	Warehouse Development Regulatory Authority WDRA (Department of Food and Public Distribution, Ministry of Consumer Affairs, Food & Public Distribution, Government of India) 	Regulate and ensure implementation of the provisions of the Warehousing (Development and Regulation) Act, 2007 for the development and regulation of warehouses, Warehouse registration & accreditation; Training
3	Civil Supplies Corporation of state governments	Food grains storage license & regulation

<p>4</p>	<p>Agricultural Produce (Grading and Marking) Act, 1937 (amended in 1986); AGMARK</p> <p>Directorate of Marketing and Inspection (DMI), an attached office of the Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India</p> 	<p>Quality grades & standards of agricultural produce</p>
<p>5</p>	<p>Accreditation Agency Central Warehousing Corporation (CWC); a Public Sector Undertaking under Ministry of Consumer Affairs, Food & Public Distribution State Warehousing Corporations (SWCs); Associates of CWC</p>	<p>Accreditation</p>
<p>6</p>	<p>Spot Exchange for issuing and trading in electronic warehouse receipts</p>	<p>Warehouse empanelment; FPO can be a Participant in trading</p>

Way Forward

Excited by the benefits and feasibility of warehouse, the Jaikisan Federation Board decided to take the identified land on lease and necessary permits at local panchayat level for the warehouse. They also requested Vikasa NGO to find an expert agency to be hired for preparation of Detailed Project Report (DPR) and proposals for raising required finance for the warehouse.

Learning from the above cases of dal mill and warehouse, as BoD members, we need to ensure the following for our FPOs.

- » *Identify the required value addition activity for our products in terms of form and time*
- » *Get the detailed business model for the activity involving capital expenditure, operational expenditure, required scale for the business, capacity utilization, linkages, value vs cost etc.*

PRODUCT DISTRIBUTION – Place Value Addition

Session Objective

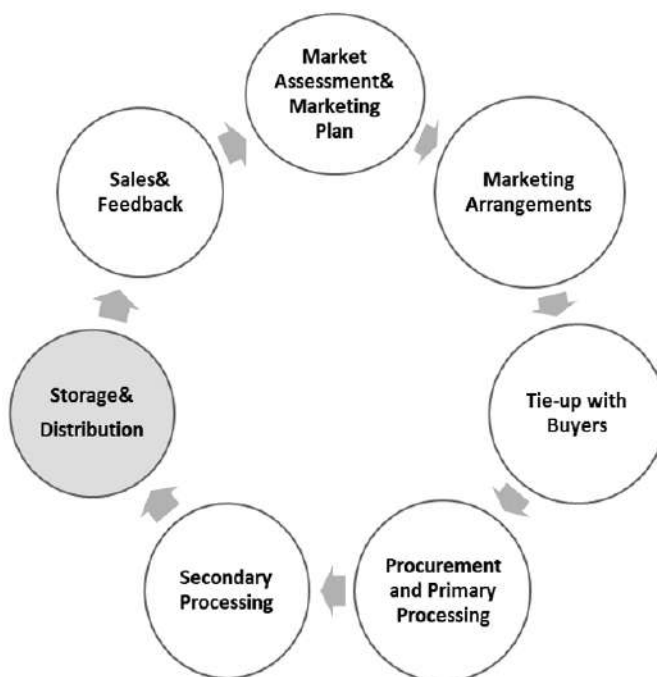


To get awareness on different key aspects of product distribution to buyers/ consumers

To know the need and effective use of transport vehicle for product distribution

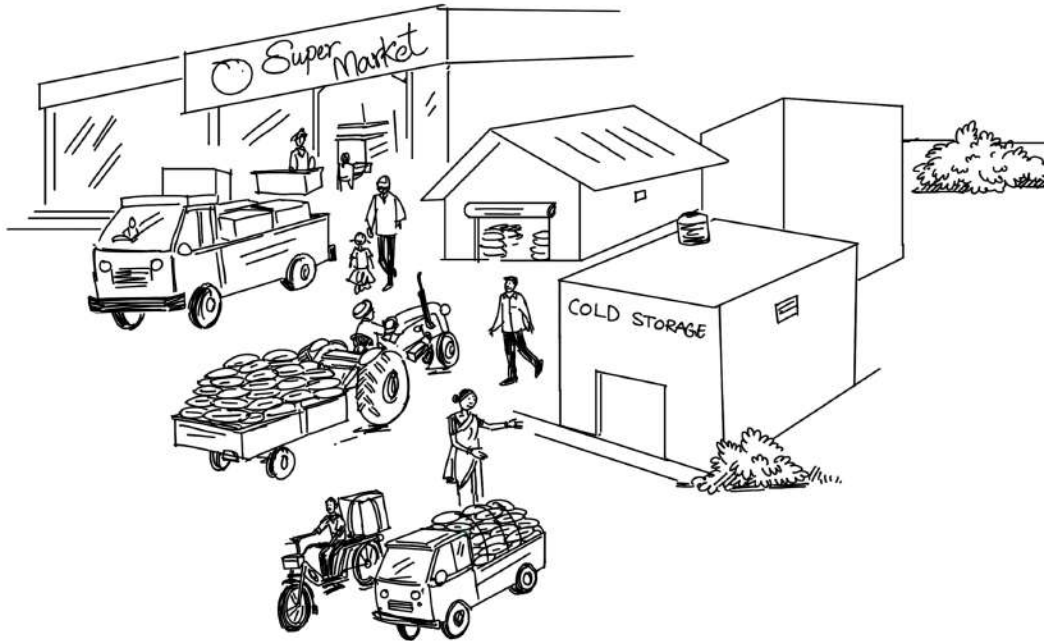
Key content items

1. Key aspects of product distribution
2. Distribution channels
3. Key aspects for gaining more value
4. Transport vehicle for products distribution



In earlier session, we dealt with the marketing function of storage. Product distribution is another important marketing function. In this session, we look into this aspect of distribution of products to buyers/ consumers. Having seen different activities like procurement, processing, storage etc., now our FPO is ready with products. So, now we need to see that the products are distributed/ supplied to our buyers.

Distribution/ supply is all about ***making the product reach our buyer/ customer in timely and consistent manner.*** Some success stories of product distribution are Lijjat papad (available in all departmental stores) and Amul milk (available in all places).



6.1 Key Aspects of Product Distribution/ Supply

Following are the four important aspects to be addressed in supply of products.

Figure 7: Key Aspects of Product Distribution



Where to supply?



When to supply?



How much to supply?



How to supply (mode of transportation)?

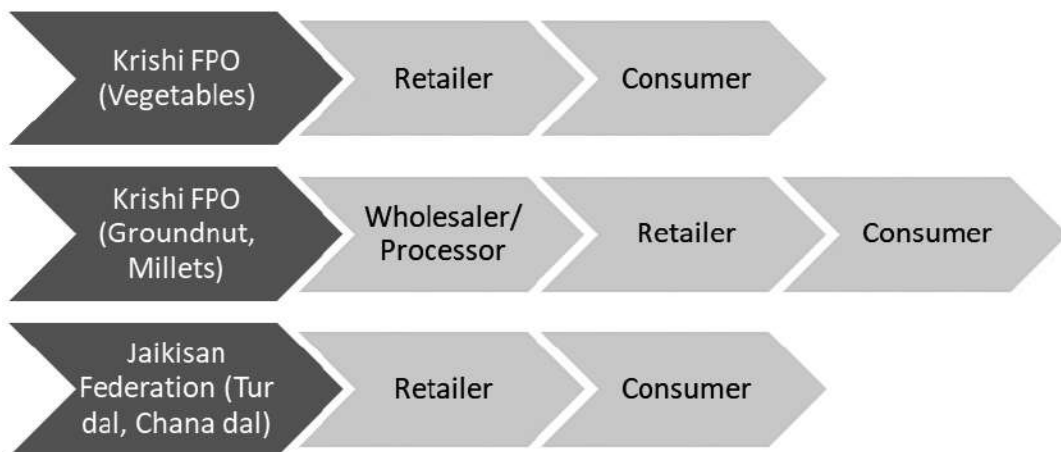
As it indicates, where to supply i.e. the place where the product has to be delivered, when to supply i.e. the time by which the product has to be delivered, how much to supply and how to supply i.e. mode of transportation are the four important aspects in product supply. As these are the basic requirements for supply of products, these aspects have to be negotiated clearly with buyers so that there is common understanding.

6.2 Distribution Channel

For any product to reach the end consumer, distribution channel of different functionaries is required. For FPOs, it is very important to have appropriate channel so as to ensure effective distribution of their products to the consumers.

For example, the Krishi FPO and Jaikisan Federation opted for following distribution channels.

Figure 8: Distribution Channels



As mentioned in earlier sessions, Krishi FPO is supplying vegetables to a corporate retail buyer. This retail buyer in turn directly supply the vegetables to the consumers through their outlets.

Whereas for other commodities of groundnut and millets, the FPO supplies to wholesaler and processor. After processing, they go to retailer and finally to consumer.

Coming to the Jaikisan Federation, as they have already processed products of tur dal and chana dal, they could reach out to retailer.

Key aspects for choosing a distribution channel

The required distribution channel needs to be chosen based the two parameters: the product and the cost.

Product

Let's take example of raw commodities like groundnut pods, maize, whole grains, vegetables etc. which are dealt at primary FPO level. In such raw commodities, FPO can supply by a transport vehicle to the buyer or buyer may also directly pick up from FPO point if the quantities are high.

Now, let's take the example of processed products like dal, edible oil, packed fruits, rice, flour (atta) etc. which are dealt at federation level. Since these are ready to eat or cook, packed food products for use by consumers, FPOs need to see that they are supplied to consumers. However, as it may be costly for FPO to directly reach the end consumer (who might be situated at faraway places), they need to have some channels for distribution of such products.

Cost

Apart from the type of product, another important consideration in selection of distribution channel is it's cost. Naturally, the cost of distribution channel should not exceed the value generated from it! For example, if the Krishi FPO has to supply one ton of vegetables directly to consumers, the value

may increase from Rs.20,000 (supplying through Retailer) to Rs.30,000 i.e. gaining Retailer margin also. However, the additional costs (like small packs, transportation, distribution to different outlets, marketing agents, advertising etc.) of directly supplying to consumers may exceed the additional benefit of Rs.10,000, then it is not viable.

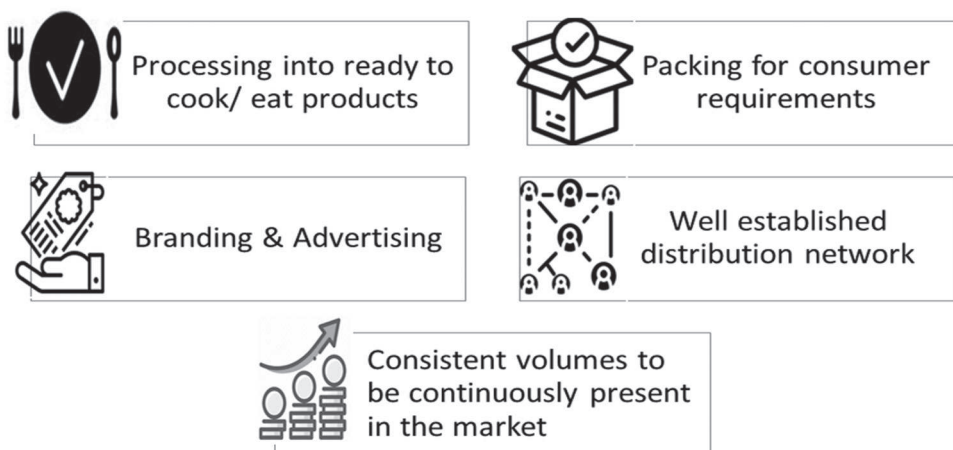
Relations with Channel Partners

Whatever may be the distribution channel, one very important aspect for effective distribution is relations with the channel partners. The channel partners include transporters, suppliers, processors, wholesalers, retailers etc. It is very important to maintain relationships with the concerned channel partners over long term and the BoD & staff of FPOs need to ensure this.

KEY ASPECTS FOR MORE VALUE GAINING

For getting more close to the consumer in the distribution channel and more value & control over the value chain, following are the key requirements for FPOs.

Figure 9: Key Aspects for Value Gaining



As it indicates, FPOs can explore the opportunities of processing into ready to cook/ eat products. Packing, branding and effective distribution to consumers also help FPOs to gain more share in the value of the products.

6.3 Transport Vehicle



What can be the most important requirement for distribution of products? Obviously, it is the transport vehicle and its efficient use. Now, let's see how the Krishi FPO utilize its transport vehicle for its business activities.

For Krishi FPO, the activities of supply of commodities to buyers and agri-inputs carrying became very frequent. With hired vehicle, there are issues of non availability in time and high cost which is affecting their procurement and supply activities. In view of this, the FPO decided to have an own vehicle for required control over their activities. They bought a mini truck of 6 tons capacity at Rs.14 lakhs. Out of Rs.14 lakhs, they got Rs.7 lakhs as grant from Department of Horticulture and remaining Rs.7 lakhs is mobilized as loan from their bank.

Since it's buying one year back, the vehicle has been in full utilization – for 25 days in a month and on an average, 100 km a day. For few days when the vehicle was not necessitated for the activities of the FPO, the FPO even hired out the vehicle to others so as to ensure it's full utilization.

As far as load is concerned, the FPO ensured that the vehicle move with a load not less than 5 tons at any point of time. So as to engage the vehicle fully, the FPO put the vehicle for multiple business, procurement, marketing, input supply etc. The FPO engaged a local youth who is active and well experienced for operation and maintenance of the vehicle. The FPO worked out clear terms for this with the youth with some incentive as well.

The expenditure and income details of the vehicle for the last one year is shown below.

Table 4: Cost and Income of Transport Vehicle

INVESTMENT				
1	Vehicle cost (including accessories & registration)			14,00,000
OPERATING EXPENSES (Rs. per year)				
S. No.	Particular	Unit	Unit cost	Cost (Rs./year)
1	Salary	Rs./Month	10,000	1,20,000
2	Incentive	Rs./Month	2,000	24,000
3	Repairs, maintenance & insurance	Rs./Year	21,000	21,000

4	Loan instalment (Principal + Interest)	Rs./Month	17,500	2,10,000
5	Diesel	Rs./Litre	60	2,25,000
	Total			6,00,000 (B)
INCOME				
1	Number of days of operation			300
2	Rental value per day			2,100
3	Gross income			6,30,000 (A)
	Net income			30,000 (A-B)

Only rental value is considered for income. The table shows that the FPO is able to meet all its costs and able to pay the loan EMI from the income of the vehicle. In view of regular business, the FPO is able to pay the bank loan EMI regularly.

Assignment:

Based on different aspects of distribution given above, let's work out the appropriate distribution mechanism for products of our FPO.

From the above discussion, we can realize that as BoD members, we need to

- » *ensure distribution of products in required quantity at right place and time*
- » *have appropriate distribution channel for the products of our FPO*
- » *plan and ensure efficient utilization of transport vehicle*

ANNEXURE 1: Feasibility for the Dal Mill

The Sub-committee of Jaikisan FPO Federation looked in detail into the actual feasibility of the dal mill. They looked into all relevant aspects of raw material availability, capacity utilization, location, transportation, demand for job work, other dal mills etc. These details are worked out for a five year period of 2019 - 2023.

Raw material availability

The estimates of pulses production and raw material availability is given below.

Table 5: Raw material availability for dal mill

S. No.	Particular	Unit	2023
	Production Profile		
1	Active pulses supplying members	No.	1,800
2	Pulses supplied to the Federation by members (pulses production by each member is 10 quintals)	Quintals	18,000
3	Pulses supplied by others for processing job work	Quintals	1,200
4	Total pulses supplied to the Federation for processing	Quintals	19,200

The expected arrivals of pulses to the Federation is taken at lower level only. There are more members cultivating pulses in operational area of member FPOs and thus more production. In fact, the estimated availability of raw material to the Federation dal mill is after considering the pulses for collective marketing by member FPOs.

Rajapet area is traditionally known for pulses. For last 10 years, pulses have been the major crop and same trend is expected for future also. The quality of this local variety is preferred for milling and dal purpose in the market. Thus, this dal is well known in the market by it’s geographic identity.

As the pulses area is located in compact manner, all the required raw material is available within only 15 km radius of Rajapet. So, it also reduces the cost of transportation and other expenses.

Also, there is lot of demand for job work for pulses processing in the area. Even, this is also taken at lower level only.

Capacity Utilization

The dal mill capacity utilization details are given in following table.

Table 6: Dal mill capacity utilization

S. No.	Particular	Unit	2023
1	Per Day Capacity (20 quintal per hour, 6 hours per day)	Quintal	120
2	No. of working days in year (8 months operational, 20 days per month)	Days	160
3	Total capacity per annum	Quintal	19,200
4	Capacity Utilization	%	100%

Regarding capacity of the dal mill, it is taken at 20 quintals or 2 TPH (Tons Per Hour). This is in view that it is the common economic capacity for dal mill in the industry. As the data shows, the dal mill can be used at full capacity.

There are two dal mills in Rajapet each with 2.5 TPH capacity. But they are outdated ones and not working efficiently. Thus, the existing dal mills are not able to cater to the processing needs of the area.

ANNEXURE 2: Business details of Dal Mill

Jaikisan FPO Federation Producer Company Limited Pulses processing unit (dal mill)		
1	Capacity	2 Tons per Hour
2	Location	Rajapet, Vijaynagar District
3	No. of farmers covered by the business	3,000
4	Major crops covered	Red gram, Bengal gram, Green gram
5	Project Budget	Rs.146.88 lakhs for capital expenditure

Product Details

Table 7: Dal mill product details

S. No.	Particular	Unit	2023
1	Grade wise product percentage		
1.1	Dal-Grade A	%	35%
1.2	Dal-Grade B	%	40%
1.3	Broken dal	%	15%
1.4	Husk	%	7%
1.5	Powder	%	3%
2	Grade wise products output		
2.1	Dal-Grade A	Quintal	6,720
2.2	Dal-Grade B	Quintal	7,680

2.3	Broken dal	Quintal	2,880
2.4	Husk	Quintal	1,344
2.5	Powder	Quintal	576

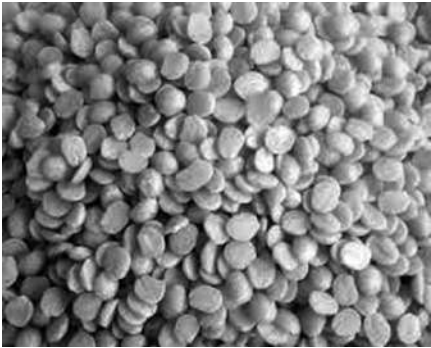
As given in the above table, there are main products of different quality dal and also by-products of husk and powder. Projections of products outturn is made based on common outturn in market and processing experience. Proportion of different products depends on various factors like quality of raw material, variety, climate, power and even skill of plant operator.

In processing, it is important to get the required quality products in planned proportion so as to be profitable. For this, quality of raw material and efficient processing operations have to be ensured.

So as to reach out to retail buyers, the dal will be packed into 5 kg, 10 kg, 15 kg and 25 kg bags. The quality products will be ensured as per the specifications in Indian Food Code under Food Safety and Standards Authority of India (FSSAI).

Table 8: FSSAI quality grades for Arhar dal

S. No.	Particular	Limit
1	Moisture	14 per cent by weight
2	Foreign matter	1 per cent by weight
3	Other edible grains	0.5 per cent by weight
4	Damaged grains	5 per cent by weight
5	Weevilled grains	3 per cent by count
6	Uric acid	100 mg. per kg.
7	Aflatoxin	30 micrograms per kg.



Expenditure Details

Capital expenditure

The estimated capital expenditure for the dal mill is given below.

Table 9: Capital Expenditure for Dall Mill

S.No.	Capital Expenditure	2019 (Rs.lakhs)
I	Land	2.50
II	Building	42.75
III	Plant & Machinery	93.93
IV	Furniture and fittings	4.80
V	Pre-operative expenses	2.90
	Total	146.88

As it shows, the common investment requirements for processing units are land, building, plant& machinery, furniture& fittings and pre-operative expenses. Most of the pre-operative expenses include engineering designs& plans, taking required licenses/ permits and initial training activities.

Considering the need for a drying platform, vehicle movement etc., an area of half acre is planned for land. The machinery is semi-automated one. Manual one is outdated now and not efficient one. Whereas fully automated one is of high cost that it may not be viable.

Operational Expenditure

The operational expenditure for dal mill is as follows.

Table 10: Dal Mill Operational Expenditure (Rs.lakhs)

S. No.	Particular	2019	2020	2021	2022	2023
A	Fixed Cost					
1	Human Resource	17.16	18.88	20.76	22.84	25.12

2	Overheads	3.44	3.78	4.16	4.58	5.03
	Sub-Total (A)	20.60	22.66	24.92	27.42	30.16
B	Variable Cost					
1	Raw material - Red gram	630.00	787.95	859.33	944.12	972.44
2	Electricity	4.20	5.61	6.53	7.67	8.43
3	Firewood	1.75	2.34	2.72	3.19	3.51
4	Consumables, spares and oil	2.77	3.70	4.31	5.06	5.57
5	Labour	3.36	4.49	5.23	6.13	6.75
6	Labelling, packing	0.70	0.94	1.09	1.28	1.41
7	Gunny bags	9.10	12.16	14.16	16.61	18.27
8	Market distribution expenses	1.40	1.87	2.18	2.56	2.81
	Sub-Total (B)	653.28	819.05	895.55	986.61	1,019.19
	Total (A+B)	673.88	841.71	920.47	1,014.03	1,049.35

In operational expenditure, there are fixed costs (means those which don't change as per day to day processing activity) and variable costs (those change as per day to day processing activity).

As shown in the details, Human Resources is the major item among fixed costs whereas raw material is the major item among variable costs.

Income Details

The sale price of different products is taken at conservative level only as per the market. Accordingly, the projected income is given in the above table. It can be noted that, apart from this income, there will be income from job work also for processing.

In view of processing, there is high possibility of distribution of some profits (up to Rs.200 per quintal) among the members as patronage bonus.

Table 11: Dal Mill Income Details

S. No.	Particular	Unit	2019	2020	2021	2022	2023
1	Selling Price Projection						
1.1	Dal-Grade A	Rs./Qtl	6,500	6,825	7,166	7,525	7,901
1.2	Dal-Grade B	Rs./Qtl	6,300	6,615	6,946	7,293	7,658
1.3	Broken dal	Rs./Qtl	2,500	2,625	2,756	2,894	3,039
1.4	Husk	Rs./Qtl	900	945	992	1,042	1,094
1.5	Powder	Rs./Qtl	1,500	1,575	1,654	1,736	1,823
2	Income						
2.1	Dal-Grade A	Rs. lakhs	318.50	406.09	451.47	505.65	530.93
2.2	Dal-Grade B	Rs. lakhs	483.84	449.82	500.09	560.11	588.11
2.3	Broken dal	Rs. lakhs	72.00	66.94	74.42	83.35	87.52
2.4	Husk	Rs. lakhs	12.10	11.25	12.50	14.00	14.70
2.5	Powder	Rs. lakhs	8.64	8.03	8.93	10.00	10.50
Total Income		Rs. lakhs	895.08	942.12	1,047.42	1,173.11	1,231.76

ANNEXURE 3: Feasibility for Warehouse

Following are the various aspects of feasibility for a warehouse for Jaikisan Federation.

For procurement and marketing, following is the estimate of the volume of commodities to the Federation. These commodities include Groundnut, Redgram, Millets, Maize and Bengalgram.

Assuming 3,000 active members; selling 5 quintals per member; $3,000 \times 5 = 15,000$ quintals

Apart from this, it is estimated that about 1,000 farmers are in requirement to store their produce, on an average 5 quintals per farmer.

$1,000 \times 5 = 5,000$ quintals

Coming to inputs, 3000 active members are in need of 1 quintal of seed and 1.5 quintals of other inputs, on an average per member. Of the total of 2.5 quintal of input requirement per member from FPO, it is required that 1 quintal needs to be stored in the warehouse for some time.

$3,000 \times 1 = 3,000$ quintals

Also, about 3,000 quintals of processed products of groundnut seed and redgram & bengalgram dal need storage requirement.

There is also demand from other agencies for storage requirement. Even though it is high, only a minimum of 5,000 quintals is considered for this at any point of time.

This indicates that there is enough availability of commodities for the business of the Federation. Also, the requirement is most part of the year as shown below.

Table 12: Storage Requirement in Federation Warehouse (in tons)

S. No.	Activity	Volume	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
1	FPO marketing	1,500	-	-	-	500	500	500	500	500	500	500	500	-
2	FPO processed products	300	150	150	150	-	-	-	150	150	150	150	150	150
3	FPO input supply	300	300	300	200	100	200	100	150	100	50		100	200
4	Individual farmers storage	500	50	50	500	500	500	500	500	500	500	500	250	150
5	Storage requirement from other agencies	500	500	500	500	500	500	500	500	500	500	500	500	500
Total storage requirement each month			1,000	1,000	1,350	1,600	1,700	1,600	1,800	1,750	1,700	1,650	1,500	1000

Of the total quantity of each activity, the expected arrivals for each month on rotational basis is given. These quantities are also taken at low levels only even if the crops and farming activities in all 5 FPOs together are spread through many months of a year.

ANNEXURE 4: Costs for Warehouse

Capital Costs

- » Land - 0.5 acre
- » Building - 10,000 square feet area; shed, roof, weighbridge, office room, compound etc.
- » Furniture and fittings – Tables, chairs, almirah etc.
- » Plant and machinery - Equipment for weighing, grading, packaging; Equipment for quality check
- » Pre-operative expenses – Detailed Project Report (DPR), appraisal, licenses, training, exposure visit, accreditation etc.

The operational costs (costs required for running of the warehouse) include all necessary costs like the following.

- » Salaries (warehouse manager, technical assistant, workers)
- » Wages (for labour)
- » Electricity
- » Warehouse Maintenance (1% of Warehouse investment)
- » Stock maintenance - fumigation, dunnage etc.
- » Interest (on term loan)
- » Depreciation

Table 13: Warehouse Operational Cost (Rs. lakhs)

S. No.	Particular	Unit	Year 1	Year 2	Year 3	Year 4	Year 5
1	Warehouse head (Rs./ month)	Rs.20,000/ month	2.40	2.64	2.90	3.19	3.51
2	Technical Assistant (Rs./month)	Rs.15,000/ month	1.80	1.98	2.18	2.40	2.64

3	Worker (Rs./ month)	Rs.12,000/ month	1.44	1.58	1.74	1.92	2.11
4	Fixed labour per FPC	3 labors, 15 days/month@ Rs. 200/day	0.41	0.45	0.49	0.54	0.59
5	Depreciation	10%	5.54	5.25	4.97	4.71	4.47
6	Interest	12%	11.32	11.32	11.32	9.90	8.49
7	Warehouse Maintenance	1% of Warehouse investment	1.18	1.30	1.43	1.57	1.73
8	Electricity	Rs. 10,000 per month	0.60	0.66	0.73	0.80	0.88
9	Stock maintenance (fumigation, dunnage etc)	Rs.10/Ton/ Month	3.53	3.71	3.89	4.09	4.29
Total			24.68	25.17	25.75	25.03	24.41

It can be noted that the operational costs are taken for full year and full capacity. Whereas, income is taken for only operating period and capacity. Also, in the plan, the income of only rentals is taken. Apart from this, there will be income from procurement activity also.

Also, the break-even volume (the minimum level at which the warehouse cover it's costs and start making profits) is estimated at 400 quintals. It can be noted that this volume can be reached at any point of time.

End Line

Please recall that at the beginning of the module, we had Baseline in which we answered well some basic questions about Value Addition.

Now, we have come to the end of this module. So, an End line is given to assess ourselves regarding additional understanding after going through this learning module.

So, let's answer some more questions based on our learning on the module.

1. *What are the different ways by which secondary (advanced) processing can be done for agricultural commodities?*

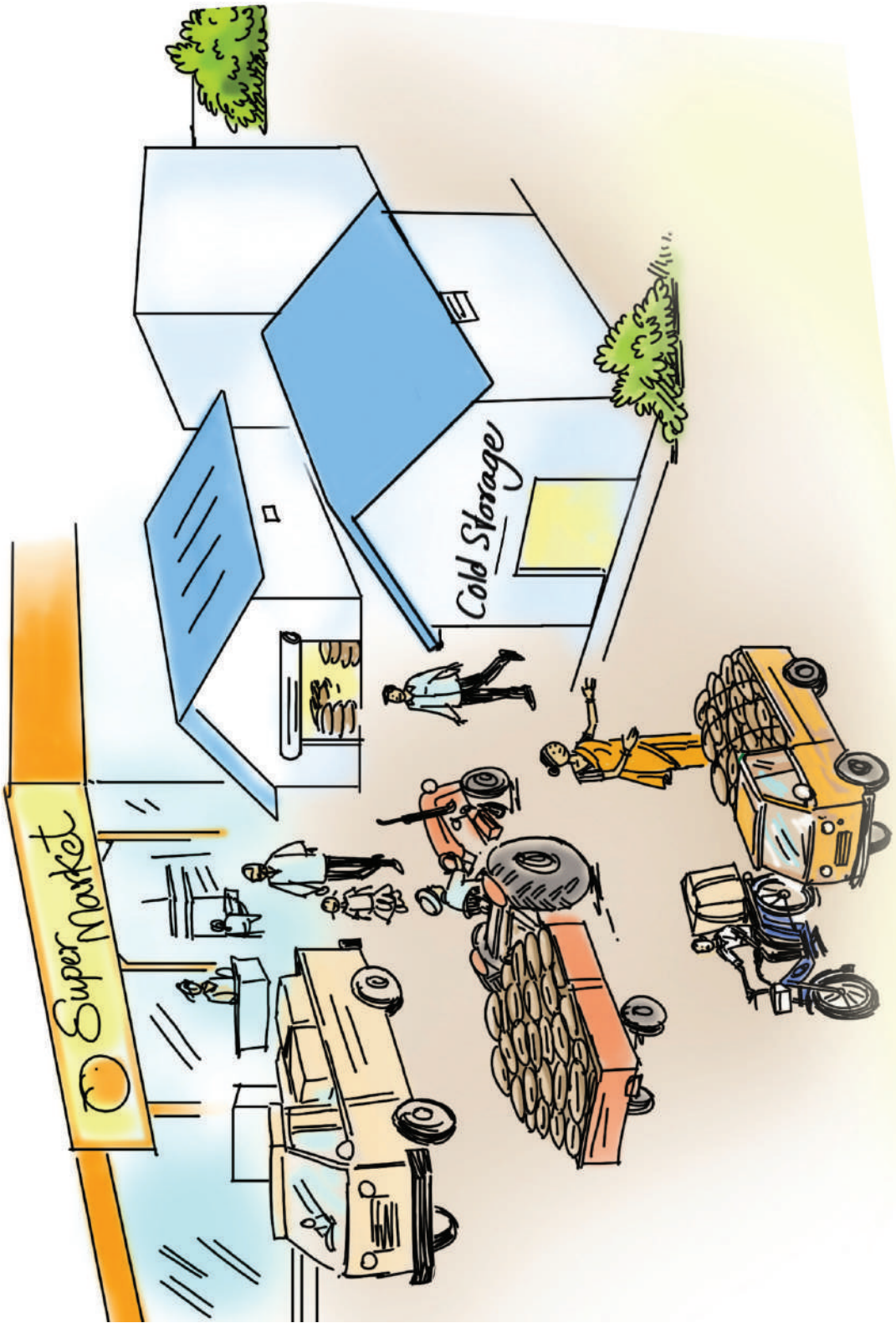
2. *Should FPOs get into processing and value addition? If yes, why?*

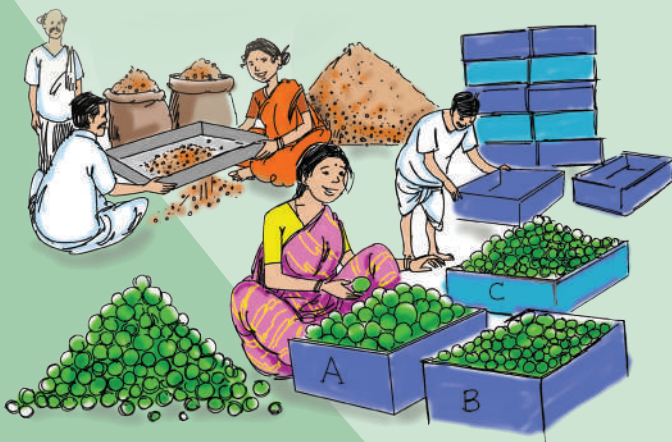
3. *What are the different ways by which more value can be gained for farmers in different agricultural products?*

KEY ACTION POINTS FROM THE MODULE

10.A. *Samriddhi: Value Addition by FPOs*

Now let's write what can be the key action points for our FPO from this Module "Samriddhi: Value Addition by FPOs".





About APMAS

APMAS is a not-for-profit national level resource organization working for the empowerment of people's institutions such as women's Self Help Groups (SHGs), SHG Federations, Cooperatives, Farmer Producer Organizations (FPOs) & other Community Based Organizations (CBOs) who believe in and practice self-help, mutual benefit, self-responsibility and self-reliance as guiding values.

Samridhi - Value Addition by Farmer Producers Organizations

FPO Incubation Centre promoted by APMAS is a one-stop-centre to provide incubation and nurturing support to FPOs to develop these institutions into viable and sustainable enterprises in partnership with FPOs and FPO promoting and supporting agencies. It provides institution development services such as visioning, statutory compliances, management, governance and capacity building to strengthen these institutions. It also provides business development services such as business planning, financial linkages, marketing and technical assistance to develop business potential of FPOs



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