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Farmer Producer Organization Profiles: Part-2

Rythu Kosam Project

ICRISAT
INTERNATIONAL CROPS RESEARCH INSTITUTE FOR THE SEMI-ARID TROPICS

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These profiles of farmer producer organizations (FPOs) are based on extensive field surveys conducted at the sites and discussions with stakeholders.

This report is available at http://oar.icrisat.org/9870

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V Sowmya and KV Raju

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Profiles of Farmer Producer Organizations

1. Chandragudem Jasmine Collection Center

Mylavaram is well-known for jasmine production. Local commission traders in the village of Chandragudem in Mylavaram collect jasmine flowers from farmers and send them to commission traders located at big agriculture market yards.

Visit date:	21 October 2016 (FPO not registered at the time of visit)
Commodity:	Jasmine flowers
CEO / MD / President	Mr Gopal Rao
Board of Directors:	4 active + 7 silent
Number of members:	250
Area under FPO:	~500 acres
Average land parcel:	2 acres
Location:	Chandragudem, Mylavaram (Figure 1.1)

Figure 1.1. Location of Chandragudem Jasmine Collection Center FPO.

Crop/details	
Jasmine land lease:	₹1,00,000
Time period of crop:	2 years
Cost of 1 graft:	₹15
Grafted plants in each *gunta (*1 acre = 4000 *guntas*)	3
Total plantation costs for 1 acre:	4000 x 3 x 15 = ₹1,80,000
Maintenance cost (pesticides, fertilizers, labor costs, etc.) per year	₹20,000/year
Total input cost for 2 years	₹1,20,000
Flowering starts 6–7 months after planting. Therefore in its 2-year life, the crop flowers for 1–1 ½ years	
In season (summer) yield:	70–80 kg/acre
Off-season (rainy + winter) yield:	<10 kg/acre
Monthly production in season:	1 ton/acre
Average cost in season:	₹70–80/kg
Off-season average cost:	₹300–400/kg
Total income of farmer:	~ ₹3.5 lakh to 4 lakh

Prices can soar during times of high demand during off-season on occasions such as festivals and weddings. The highest price record in the past 10 years set during Dussera 2016 was ₹90/Kg.

Process of sale

- Commission agents who are mostly big farmers set up collection points at various corners of the temple yard.
- The farmer comes to the temple yard by 8 am with the flowers picked in the morning.
- Between 8 am and 10 am, the agents weighs the flowers and records them in a logbook along with the farmers' name. The flowers are dumped in a pile (Figure 1.2).

Figure 1.2. Jasmine mounds being dumped in the temple yard.

- The logbook provides information such as the farmer's name, amount due from previous trade, credit given, weight of flowers given, its price per kg, and amount to be given.
- Farmers usually trade with a single agent but aren't obliged to do so by any contractual agreement. In general, the transactions are based on trust.
- Each agent usually has 70–80 farmers who deposit their produce with her/him.
- After the collection, the commission agents send the flowers to commission traders located at the Agricultural Produce Market Committee (APMC) market yard. In the case of Mylavaram, the Gudimalkapur APMC flower market yard in Hyderabad is where the flowers, packed in moist guny bags to retain their freshness, are transported.
- Depending on the traders the agent is associated with, she/he distributes the bags among one or more traders (Figure 1.3). Generally, the agents distribute their bags to all the traders they are associated with based on a general verbal agreement but in the case of a specific demand, a trader might order for a certain number of bags to be delivered.
- The agents provide the transporter/vehicle driver with their list of traders and the number of bags to be delivered by him.
- The agents in the village collect a commission of ₹10/Kg in season and a higher commission of ₹50-60/kg during off season from the farmers. Part of this commission is used for transportation costs. During off-season, the low produce leads to higher commission due to the higher cost of transportation per kg
- Trade in jasmine calls for immediate payment. As soon as the flower bags are delivered to the trader, depending on the estimated price of the day which is determined by the maximum price on the previous day, the trader calculates the amount to be given to the local agent, deducts his commission and pays the transporter/vehicle driver the amount to be paid to the agent.
- While on paper the commission collected by the traders at the APMC market from the collection agents in the villages range from 4 to 6%, in reality it is much higher.
- The agents pay the farmers at regular intervals like every three days or if the trust is high because of long-term trade association then even weekly. The entire process of trade is shown in figure 1.4.

Gudimalkapur flower market yard: This is the largest flower market yard in Telangana state located near Mehdipatnam in Hyderabad. Traders rent space/stores in the market yard from APMC and pay them a daily commission of 1% of their revenue. The market which opens at 5:30 am often does business till late in the evening, but the trade peaks between 5:30 am and 11 am. The price of flowers can fluctuate wildly on a single day depending on the demand. The traders get their jasmine locally from areas like Shamshabad and non-locally from Vijayawada, Mylavaram, Kurnool, Khammam, etc. The traders get approximately 200–300 kg of flowers per day in season and around 10–30 kg during off-season. The traders set the price and sell the flowers using a unit called '*dhada*' which is equal to 300 g.

In season average cost of *dhada*:	₹20–60
Off-season average cost of *dhada:*	₹80–100
Yearly average cost the trader gets:	₹90–120/kg = ₹30–40/*dhada*

Off-season *dhada* cost can go as high as ₹200 based on demand, especially during festivals.

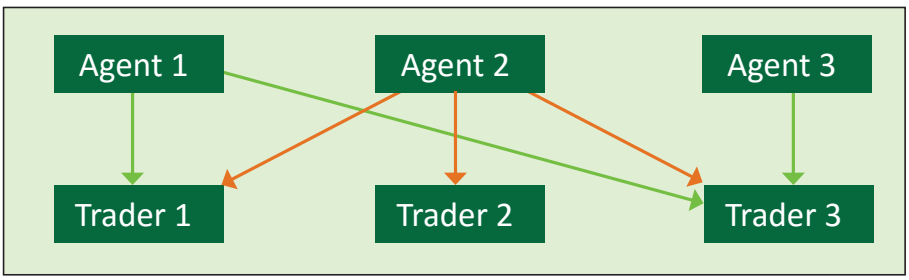


Figure 1.3. Flowchart depicting agents' distribution of flower bags to traders.

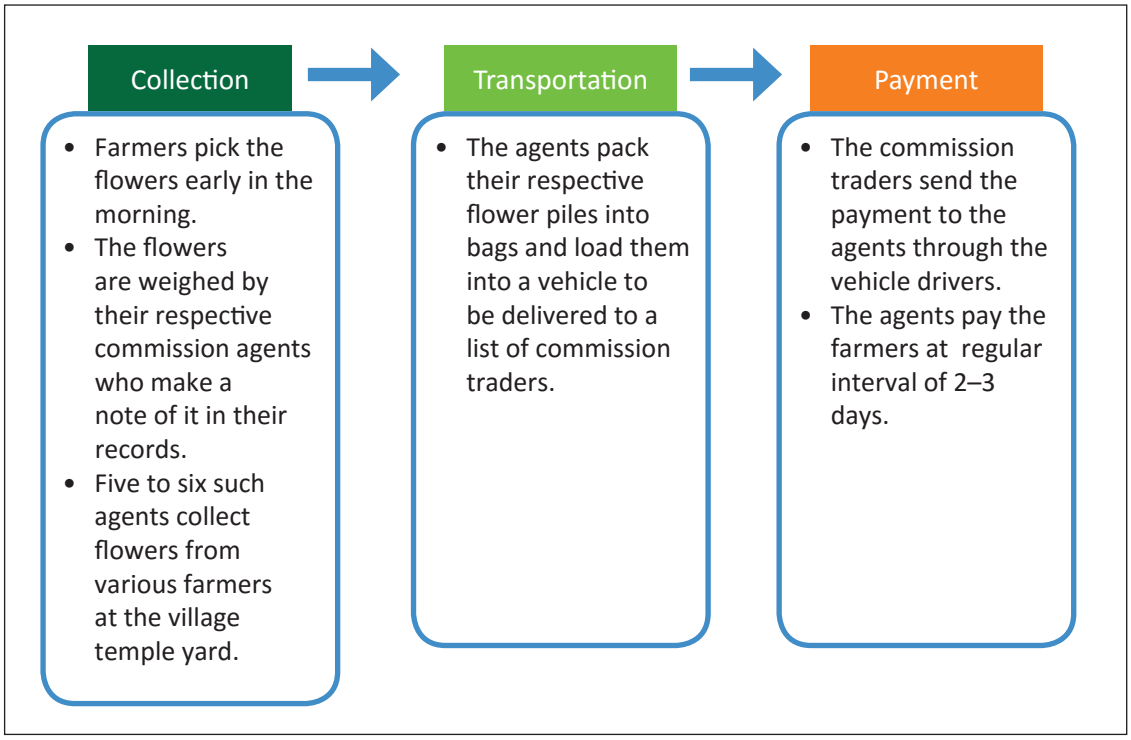


Figure 1.4. Process diagram of the jasmine trade.

Process of distribution from APMC market yard

- Similar to how local commission agents in villages have multiple traders they are associated with, the traders also have multiple agents from across the region who send them flowers. They also have farmers from the local vicinity who directly deposit their flowers with the trader.
- The traders maintain farmer booklets of these local farmers and pay them at regular intervals. Depending on the trust between the farmer and the trader, the farmer is even paid monthly sometimes.
- The traders also give credit to the farmers associated with them when necessary, for both personal as well as cultivation needs. In return they collect larger commission from the farmers' payment instead of charging interest. In such a case the farmer is obliged to deposit his flowers only with the particular trader he/she has taken credit from. In this way the traders retain their farmers and enhance the farmer-trader relationship.
- The commission traders sell the flowers either directly to consumers or to smaller traders. The price of the flowers depends upon the bargaining capacity of the buyer.
- The weight of produce sold varies from ½ kg (direct consumer or small-cart flower sellers) to 100–200 kg (big shop owners, garland makers, etc.)
- The traders also give flowers on credit to street vendors. The traders maintain a logbook of all their credit buyers. These credit buyers pay the traders the amount for their flowers along with a 10% interest after they sell their flowers.
- According to the trader more than 50% of the credit sellers defer their payment which makes it a very risky business for them.
- The traders set the price of the flowers per *dhada* (300 g). The cost of 1 kg of flowers given to street vendors is equivalent to the cost of three *dhadas* as the excess 100 g is treated as wastage. For example, if one *dhada* costs ₹20, then the cost of 1 kg is ₹60, even though three *dhadas* is equal to only 900 g. The extra 100 g is treated as wastage.

FPO idea

A Jasmine FPO is soon to be registered in this area. The main motive of the FPO is to stabilize the commission taken by the local agents from the farmers. All the agents associated with the FPO will be authorized to take only ₹10 per bag as commission for transportation regardless of the season and the supply. The intended organization structure of the FPO is shown in Figure 1.5.

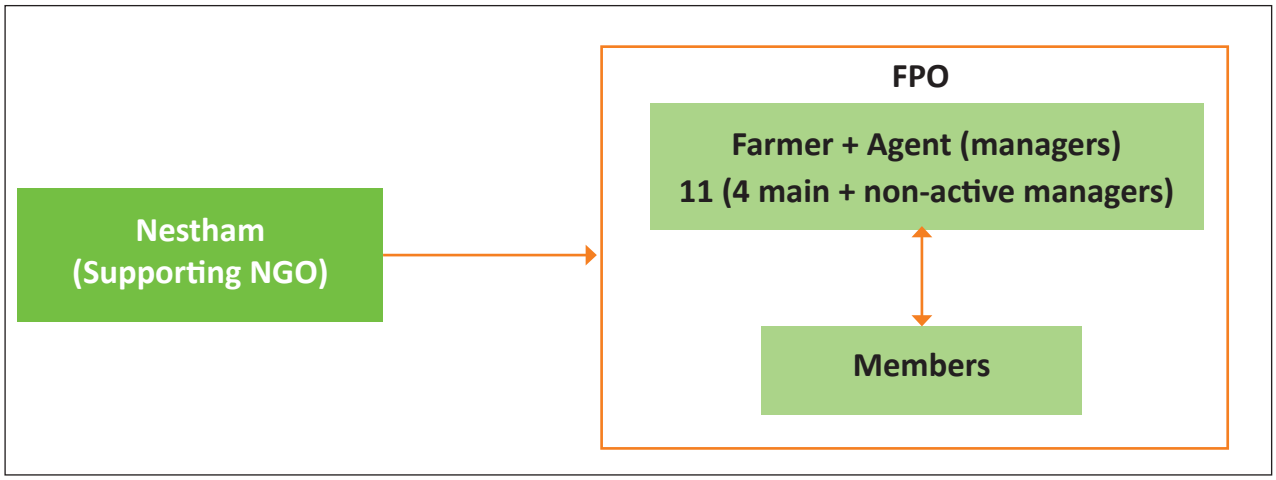


Figure 1.5. The intended organization structure of the FPO to be set up.

2. Noveeal Coconut Producers Company Ltd.

Visit dates:	17/11/2016, 18/11/2016
Commodity:	Coconut
CEO / MD / President	Dr Rama Raju
Board of Directors:	10 enrolled, 8 yet to enroll
Number of members:	13,000 farmers under 250 societies in 15 *mandals*
Area under FPO:	30,000 acres (20 lakh trees)
Average land parcel:	5 acres
Location:	Amalapuram (Figure 2.1)

Figure 2.1. Location of Noveeal Coconut Producers Company Ltd.

Objective: To improve the farmers' profitability by reducing input costs and direct marketing of the produce in the market.

Functioning: Currently the FPO has two main functions (Fig. 2.2):

- **Information support:** The FPO conducts regular information sessions to keep its members informed about the latest schemes they can benefit from and apply. Under a Government Demonstration Scheme inputs are given twice in the lifecycle of a coconut tree. This includes 1 kg of urea + 1 kg SSP (Single Super Phosphate) + 2 kg of MOP (Muriate of Potash) + 500 g of $MgSo_4$ (Magnesium Sulfate) + 50 g Borax. The company is the implementing agency which helps the farmers benefit from this scheme.

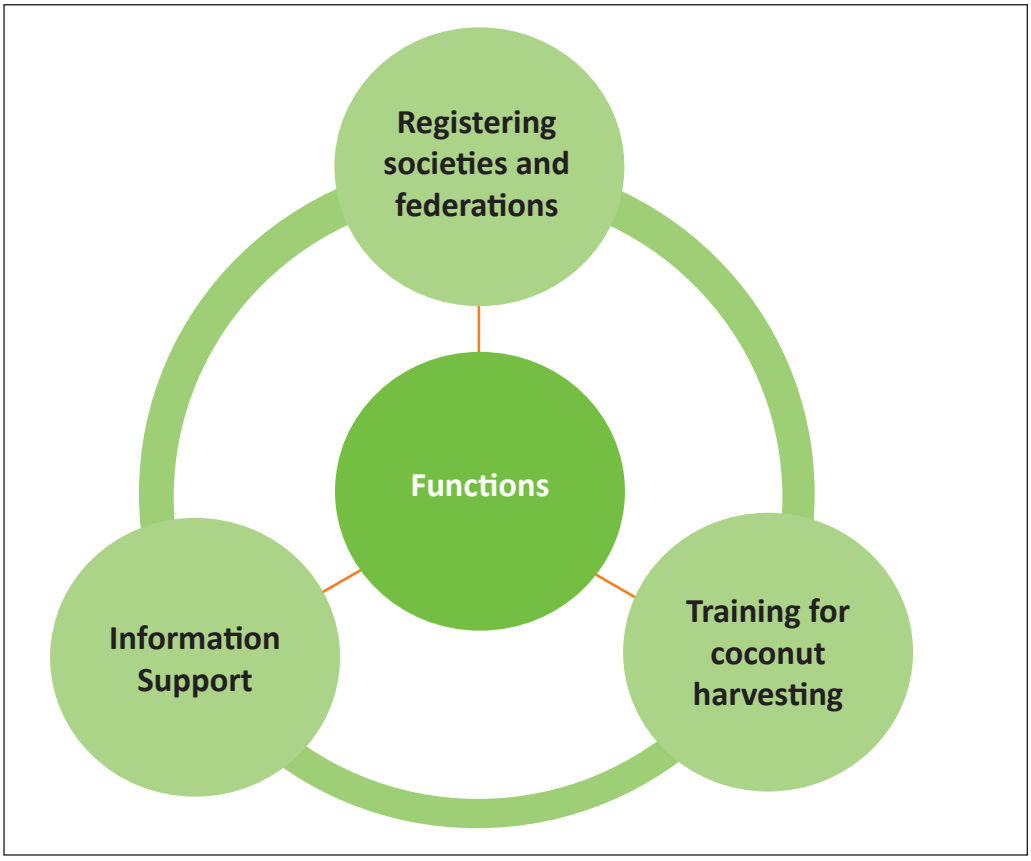


Figure 2.2. Functions of the FPO.

- **Training of workers in harvesting of coconuts:** After thorough analysis, the FPO identified the lack of proper workforce for harvesting coconuts as one of the major problems. Due to lack of local labor and migrant labor who charge more, the frequency of harvests had to be reduced from once in a month to once every two to three months. To overcome the problem, the FPO gets local workers trained in these skills. The training program is conducted at Dr YSR Horticulture University in Ambajipeta, West Godavari and funded by the Coconut Development Board, Andhra Pradesh. Master trainers are associated with the FPO (Fig. 2.3). It is a six-day training after which the trainees are given the necessary equipment to climb trees. In 2015-16, 400 workers were trained and in 2016–17, the FPO got funding to train 340 workers, out of which 280 have already completed the course.

Registering coconut societies and federations under the company: The FPO forms local coconut societies and coconut federations under the coconut company in line with its 3-tier organization structure.

Organization structure: Every coconut producer company registered under the Coconut Development Board has a 3-tier organization structure (Fig. 2.4).

This FPO has all the necessary books, records and documents professionally maintained. They have their annual review meetings where they discuss and decide the course of action for the company. But as of now the company is still in the process of spreading awareness and successfully forming societies and cooperatives of coconut producers to bring them under one umbrella. It is yet to enter the market and begin trade.

Figure 2.3. Coconut Development Board orchard where training programs are conducted.

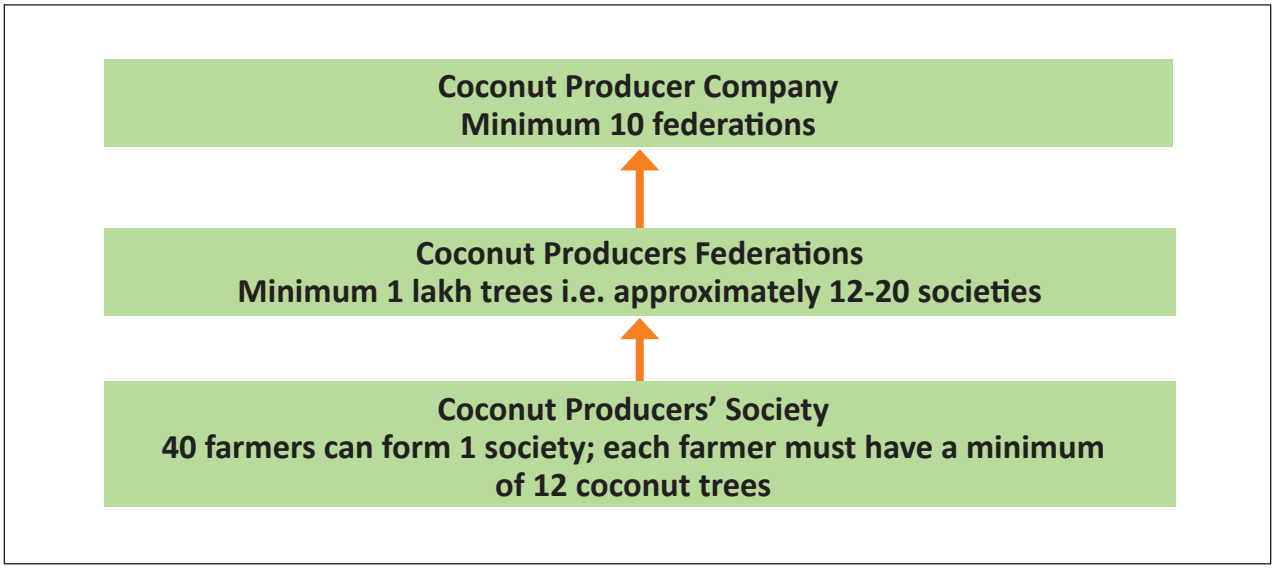


Figure 2.4. Organization structure.

Crop details	
Varieties Preferred	East Coast Tall and Dwarf – Ganga
Lifespan:	65–70 years
Harvest time:	Every 30-40 days
No. of trees/acre	60 (7.5m x 8m/8m x 8m spacing)
After flowering, the fruit is harvested after 8–9 months for tender coconut (*kobbari bondam)* and after 11 months for mature coconut *(kobbari kaya)*	
East Coast Tall	**Dwarf**
No of coconuts/tree/year: 80–100	**No of coconuts/tree/year:** 60–70
Flowering starts 6–8 years after planting	Flowering starts 3 years after planting but it takes another 2 years for yield to sustain
Yield: 80–100 coconuts/tree/year (can go up to 150) (medium-high) = ~ 7000 coconuts/acre	**Yield:** 60–80 coconuts/tree/year (poor-medium) = ~ 5400 coconuts/acre
Plant cost: ₹300 (3-year-old plant)	**Plant Cost:** ₹350/plant (1 year old)
	Highly prone to diseases and requires better care Yields better quality coconuts with more water therefore used for harvesting tender coconuts (*bondams)*
Labor cost to harvest fruit:	80 paisa/nut
Cost of mature coconut fruit (*kobbari kaya*):	₹3.50 (maximum ₹10 last year)
Cost of tender coconut used for water (*bondam*):	₹4.50
Cost of cultivation:	₹25,000/acre/year approximately
Since labor cost is high, farmers try to reduce input cost by reducing fertilizers	
Minimum input cost:	₹10,000/acre/year (but in such a case, the yield also is minimum)
Profit margin:	₹8000–12,000/acre/year
Land parcel in Konaseema:	3–10 acres
***Kurudi* (Dry coconut)**	
Preparation cost:	₹2/nut
Selling cost:	₹6/nut
Best intercrop for East-Godavari Conditions:	Cocoa
Cocoa lifespan	40 years
Other popular intercrops:	Turmeric, banana
Hybrid of Tall and Dwarf: Godavari Ganga Variety (Early yield from dwarf and high yield from tall)	
Coconut trade is not commission-based rather it is a direct sale. The trader buys from the farmers and sells it forward at his own profit margin. He is just a customer to the farmer and does not collect any commission from the farmer.	
The laborers/harvesters work in groups/unions and depending on the size of the farm, the required number of workers come and work.	
The coconut farmers are forced to sell only to the traders as the traders give them credit and finance the crop. The farmers prefer financing from the traders to that of a bank as the traders do not charge any interest. However, traders pay less for the produce they procure. Because of this system the trader holds higher control over the trade and pricing.	

FPO financial details

Share capital collected: ₹ 5,00,00,000 **Paid-in capital:** ₹1,00,000

FPO future plans:

Currently the harvesting of coconut trees of FPO members is done by laborers from outside. The FPO aims to establish a labor force to harvest the FPO member farms and if possible farms of non-members for extra income.

Also the FPO is getting a yard constructed for drying coconuts to prepare *kurudi* (dry coconut) which can be exported for a better price.

The FPO is also working towards getting approval for extraction of coconut *neera* – coconut sap that can be fermented and used. This *neera* has a lot of value addition options. If permission is received, the income of farmers can be doubled.

Coconut supply chain and analysis:

Coconut is a crop with a lot of value addition options. But in the state of Andhra Pradesh very little processing is done. Kerala is well-known for its processing but most of the processing that happens is oil extraction and drying of coconut. In spite of being the third largest producer of coconut in the world, there is little processing happening (Figs. 2.5 and 2.6).

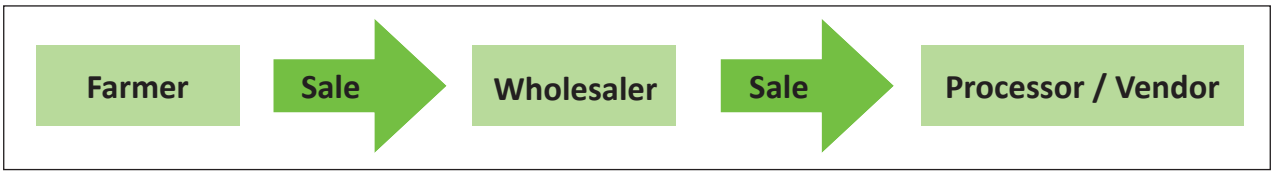


Figure 2.5. Coconut supply chain.

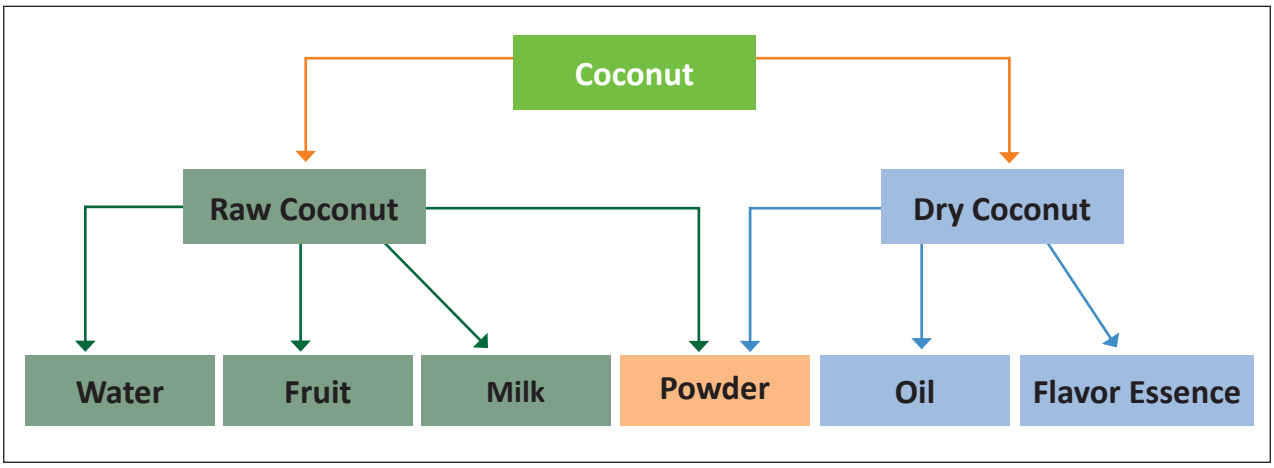


Figure 2.6. Coconut processing chain.

Coconut Development Board: Under ICAR (Indian Council for Agriculture Research) the CDB runs the All India Co-ordinated Research Program on Palms. Under this program, production is enhanced by introduction of improved varieties. New varieties will be introduced into the market only if they can improve the yield or quality by 15% -20%. The CDB tests the varieties in their own orchard, then in the fields of interested farmers and then finally releases it into the market. The farmers stay in constant touch with the CDB and contact the station for help in crop management and pest and disease control. The scientists of CDB also maintain constant contact with the farmers and help them in terms of technical knowledge. The Coconut Development Board research station for this area is located at Ambajipeta near Amalapuram.

3. Girijan Vikas NGO

This is an extremely backward tribal area which was until recently infested with extremists. The connectivity is bad, as a lot of villages do not have even a basic road connection. The villagers have abundant land and the average land parcel is about 5 acres**.** The cost of living is low and the farmers here do not have the habit of saving. Farmers do not break even and therefore are not motivated to adopt new practices. Hence their crop quality and quantity is poor. They do not use pesticides or fertilizers and yet do not get the extra benefit of growing crops organically as they lack the exposure to benefit from their good practices.

Girijan Vikas is an NGO working in Narsipatnam for the past 15 years. They have worked on multiple projects, three of which are in the process of being converted directly into FPOs. The NGO aims to support these three FPOs initially for a commission in the profit until the heads of each FPO can be trained to handle the marketing of the produce.

3.1. Andhra Kashmir Farmer Producer Company

Visit date:	17/12/2016 (FPO not registered at the time of visit)
Commodity:	Turmeric, pineapple (major crops), pepper, coffee and millets
CEO	Mr Shivaji
Board of Directors:	10
Number of members:	1150
Number of villages	29
Average land parcel:	~5 acres
Area under FPO:	5750 acres approx.
Location:	Tajangi-Chintapalli (Figs. 3.1.1 and 3.1.2)

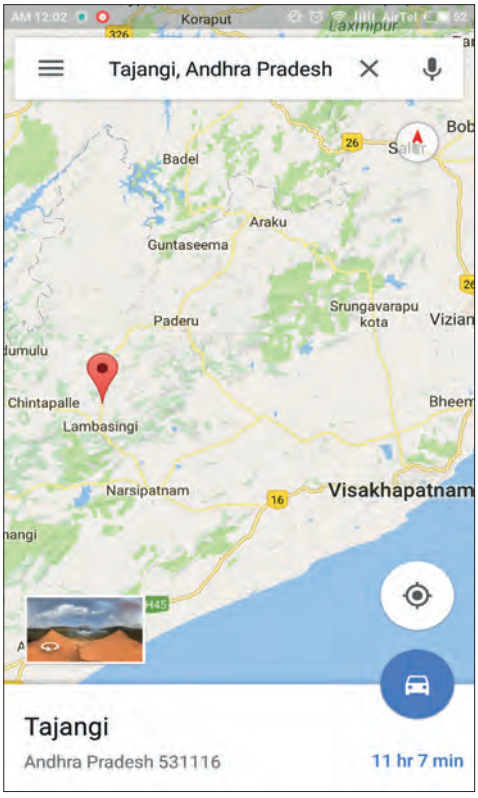


Figure 3.1.1. Location of Andhra Kashmir Farmer Producer Company FPO.

Figure 3.1.2. Banner of the Andhra Kashmir Farmer Producer Company FPO.

Field officer: Babu

Organization structure: Ten directors, one CEO and six committee members per village. Each committee represents its respective village (Fig. 3.1.3).

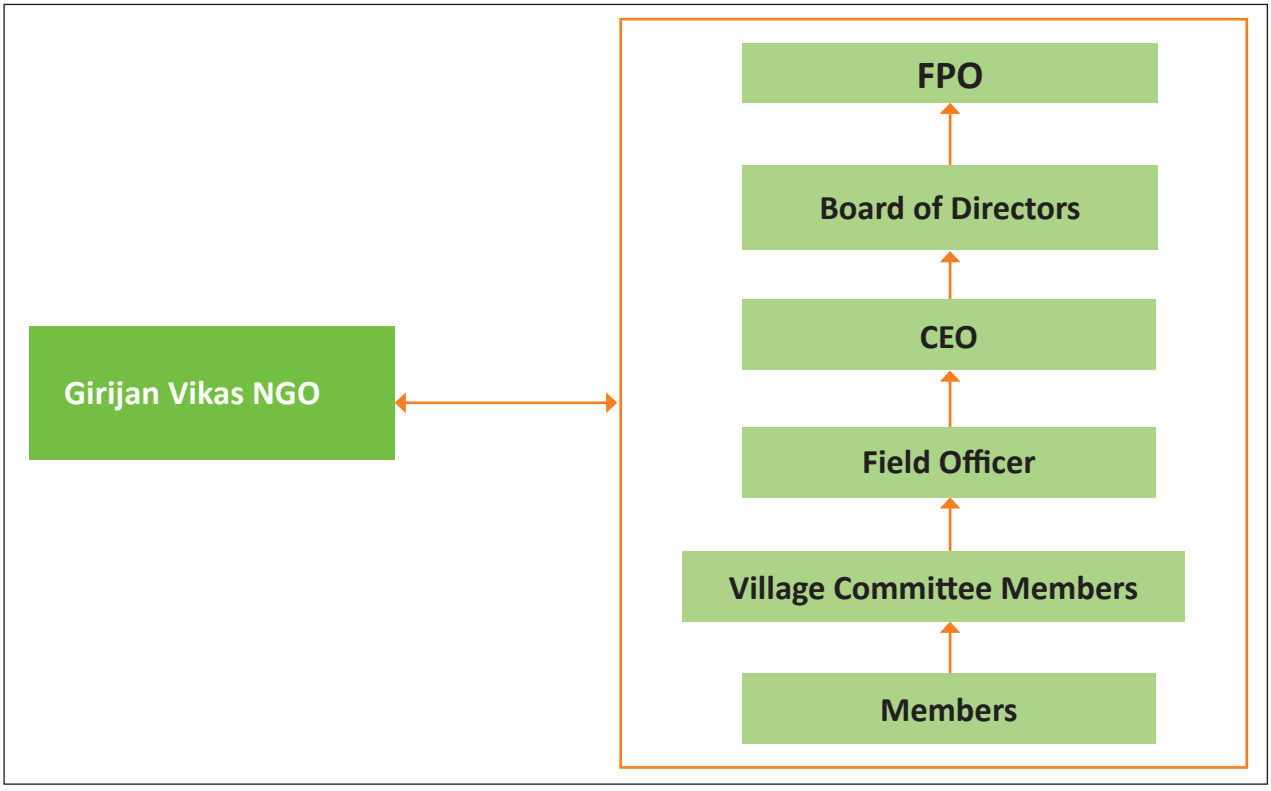


Figure 3.1.3. Organization structure.

Activities

- Exposure visit of farmers to Erode to understand better techniques of turmeric cultivation.
- Propagation of the practice of intercropping: Cocoa-pepper and mango-turmeric.
- Interaction with district horticulture representatives for area expansion of pineapple.
    - 90 acres of pineapple plantation developed with the support of the horticulture department.
    - Training was provided for farmers through tie-up with the local agricultural research center on best practices for the cultivation of pineapple.
    - Fertilizers have been obtained by farmers through department schemes.
    - Procured boiler and polishing units for turmeric processing.

Activities planned for 2017

- Pineapple quality improvement training.
- Focus on mango, pepper and turmeric for quality improvement and market connections.
- FPO to procure 100 kg raw turmeric from the farmers and process it using the boiler and polishing unit before selling it in the market.
- Organic certification.

Crop details

Pineapple		Turmeric	
Lifespan	15 years	**Yield**	5–6 tons/acre
Harvest	Yearly: June-July	**Lifespan**	Normally 9 months, but tribals leave the crop for more than a year before harvesting.
Flowering	3 years after planting		
Yield during season	3000–4000 fruits/acre	1 ton of dried and cooked turmeric requires 3–4 tons of raw harvest.	
Average cost	₹10/fruit		
Income	₹30,000/acre	No traders or auction procedure available in the area therefore exploitation by middlemen is high. Middlemen come with a predefined price and the farmers are forced to sell at that price.	
Fertilizers and tree saplings are obtained through schemes and subsidies, hence input cost is low.			
Tribals practice partial collective farming i.e. they help each other in the process of farming therefore labor costs are nil.		Since the farmers do not bargain, they make little profit.	
		Average cost	₹60–65/kg
Shelf life	< 1 week	= ₹6,000–6,500/quintal	

Market linkages

- The CEO of Aromos International, New Delhi, visited the FPO on 5 March 2017 and interacted with the directors regarding the procurement of turmeric.

3.2 Manathota Farmer Producer Company

Visit date:	17/12/2016 (FPO not registered at the time of visit)
Commodity:	Mango, litchi, turmeric (main focus), beans, pepper, pineapple
CEO	Mr Chinna Rao
Board of Directors:	10
Number of members:	500
Number of villages	23
Average land parcel:	~ 5 acres
Area under FPO:	2500 acres
Location:	Gudem Kotha Veedhi (Fig. 3.2.1)

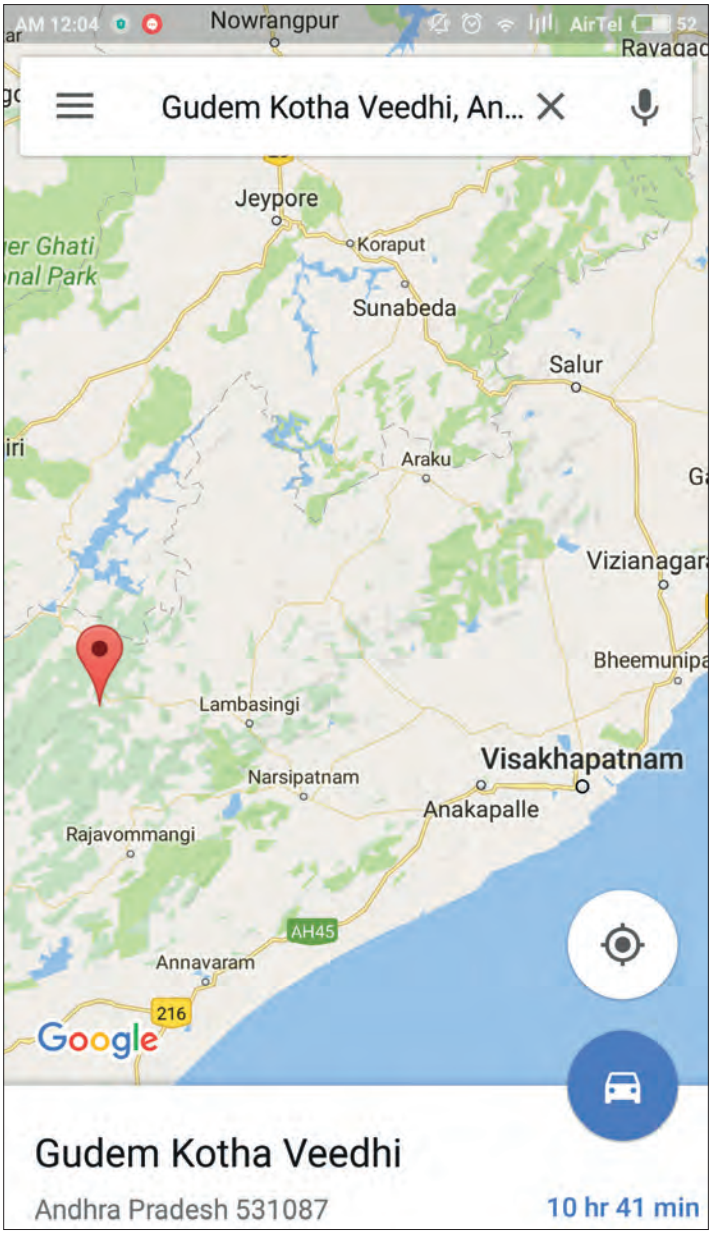


Figure 3.2.1. Location of Manathota Farmer Producer Company FPO.

Organization structure: The organization is headed by a CEO who is governed by 10 Board Directors (Fig.3.2.2).

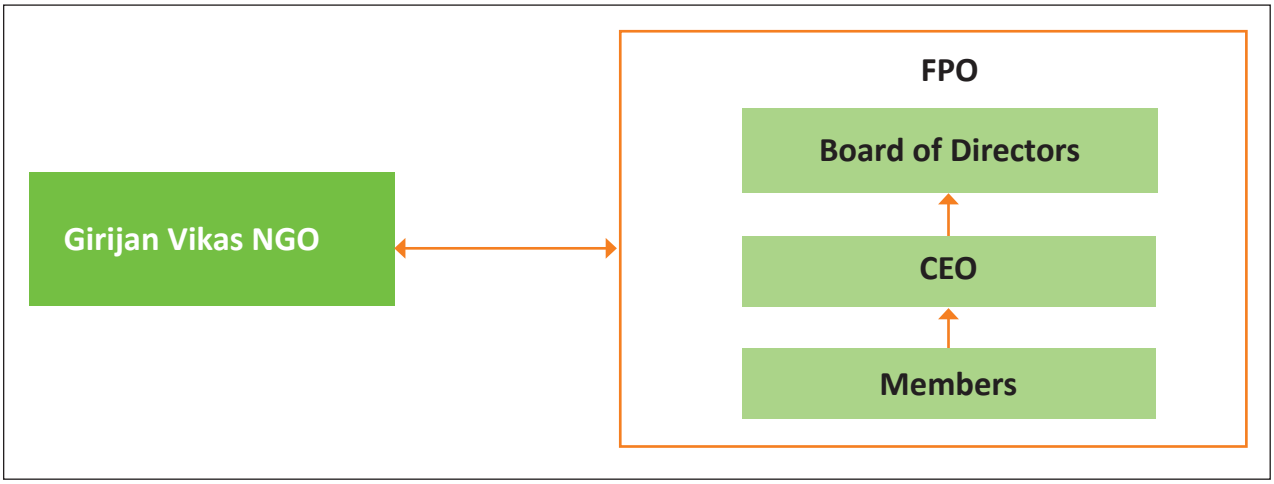


Figure 3.2.2. Organization structure.

Activities

- This started off with the *Manathota* horticulture scheme for the expansion of mango orchards (Figs. 3.2.3 and 3.2.4 a and b). Girijan Vikas under this scheme funded ₹2.17 crore from National Bank for Agriculture and Rural Development (NABARD) and developed close to 500 acres of mango orchards in this area.
- After the completion of the government scheme, the project was converted into an FPC with a NABARD funding of ₹9 lakh. The first mango and litchi crops are due in summer 2017.
- Procured boiler and polishing units for turmeric processing.
- Planted 1 acre of experimental crop of Roma brand of turmeric. Yield increased up to 2 tons and curcumin content is 6% as opposed to the previous 4% (Fig. 3.2.5 a and b).

Figure 3.2.3. Manathota mango orchard.

Figure 3.2.4. (a) Mango and (b) Litchi tree.

Figure 3.2.5. (a) Experimental crop of Roma brand of turmeric and (b) Turmeric root that's close to harvest.

Activities planned for 2017

- Distribute Roma turmeric to all the farmers and promote its usage.
- Set up ripening chambers for mango.
- FPO to directly allow the farmers to use the processing units and procure 100 kg of processed turmeric.
- Organic certification.
- Turmeric is randomly planted therefore harvesting becomes difficult. Promote organized row-wise planting of turmeric.

Crop details	
Turmeric	
Yield:	5–6 tons/acre
Lifespan:	Normally 9 months but tribals leave the crop for more than a year before harvesting
Input cost:	Tribals barely use fertilizers or pesticides. The only cost is the seed which in case of turmeric is taken from the previous harvested crop. So low input cost.
1 ton of dried and cooked turmeric requires 3–4 tons of raw harvest.	
No traders or auction procedure available in the area, therefore exploitation by middle men is high. Middlemen come with a predefined price and the farmers are forced to sell at that price.	
Since there is no bargaining, the farmer makes little profit.	
Average cost:	₹60–65/kg

Market linkage: In the case of both Andhra Kashmir Farmer Producer Company and Manathota Farmer Producer Company, the procurement and grading is going to be done in-house. The FPO is initially going to procure the produce for the minimum market price. After selling it in the market, the profit is then split:

- 50% of the profit goes to the farmer
- 10% is for the operational cost of the FPO
- 40% is for quality improvement programs and infrastructure development of FPO

Girijan Vikas NGO is going to act as the mediator in market linkages for 2–3 years until sustainability can be achieved by the FPOs through training of FPO members. The NGO is going to collect 10% of the profit as a consultation fee.

Market linkages status

- Gopuram Turmeric Company is interested in procuring 100 tons of turmeric. Talks are in process.
- A potential buyer from Chennai visited the farms.

3.3. Pakalapadu Panthulupadu Vegetable FPO

Visit date:	17/12/2016 (FPO not registered at the time of visit)
Commodity:	13 varieties of vegetables
CEO	Mr Srihari
Board of Directors:	5
Number of members:	650
Number of villages	10+
Average land parcel:	~3–3.5 acres
Area under FPO:	2000
Location:	Pakalapadu (Fig. 3.3.1)

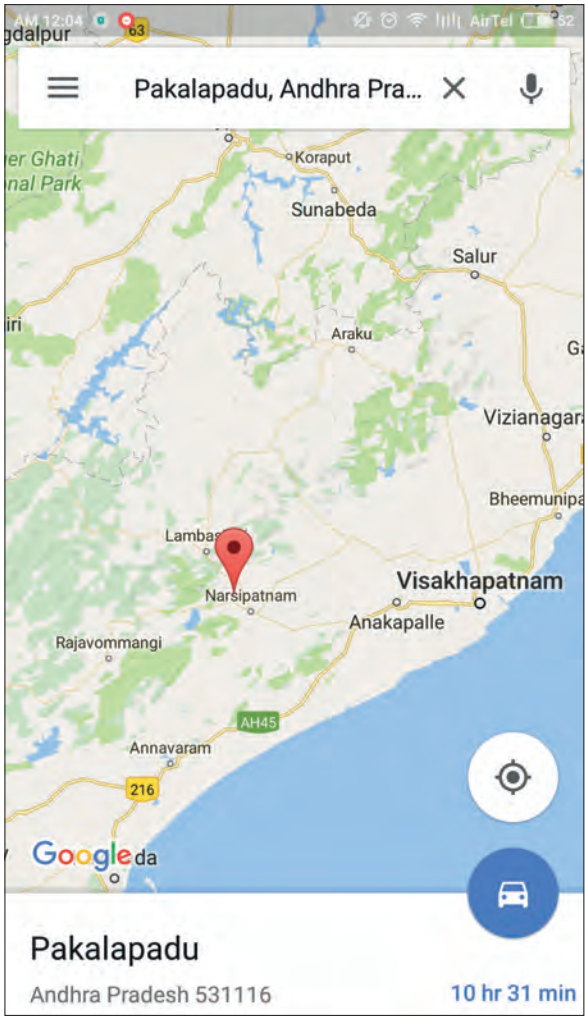


Figure 3.3.1. Location of Pakalapadu Panthulupadu Vegetable FPO.

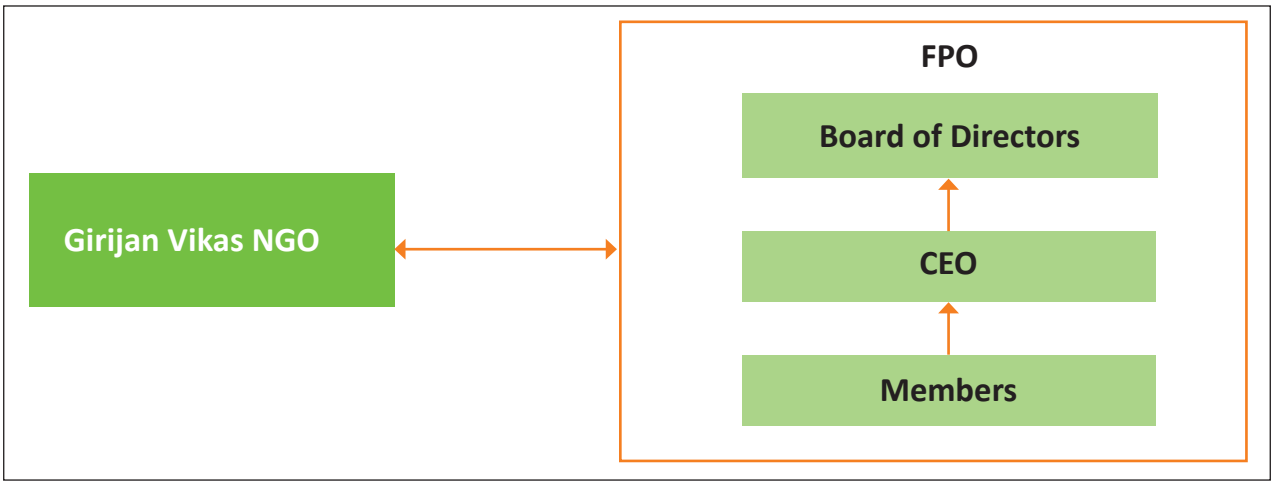


Figure 3.3.2. Organization structure.

Organization structure: The organization is headed by a CEO who is governed by five Board Directors (Fig. 3.3.2).

This FPO is situated in a very interior area where road connectivity is in the process of being established. Being a valley, there is a dam to collect water that comes from a spring from a nearby hill but connectivity of that dam to the farms is missing because of which water supply is a major issue in the area.

In spite of that, through sharing of motors and water pumps, the farmers cultivate vegetables on a large-scale but have very low market connection and are highly exploited by middlemen.

Activities

- **Seed Quality Improvement:** Previously due to its lack of connectivity, the farmers lacked supply of good quality seeds. The FPO in arrangement with a multinational company procured subsidy from the government and distributed quality seeds to all the farmers. Thereby yield also improved.
- Sticky pads that attract insects and trap them were distributed to the farmers as an innovative method to reduce insect infestations.

Farmer expenses:

- Auto-rickshaw fare to the main road: ₹20/basket + ₹10/person
- *Aaseelu* (local tax) for selling in the market: ₹10
- If income is ₹100/bag, then profit is ₹50

Challenges:

- No farmers' market in Narsipatnam (nearest town).
- Syndicate of middlemen leading to high exploitation.
- Bad connectivity.
- Government subsidies not according to need. What is given may not be necessary and what is necessary may not be given.

4. Rythula Jattu Kuragayala Bellam Utpattidarula Producer Company

Visit date:	19/12/2016
Commodity:	18 vegetable varieties and sugarcane (crops are harvested after 9 months and the land lies fallow for the remaining 3 months)
CEO	Mr Anil Kumar Dutta (A farmer who is a retired chemical engineer and a Philanthropist)
Board of Directors:	5
Number of members:	440
Villages covered	1
Area under FPO:	700 acres
Average land parcel:	1–2 acres
Location:	Veerasagaram (Fig. 4.1)

Figure 4.1. Location of Rythula Jattu Kuragayala Bellam Utpattidarula Producer Company.

Registration date: 22 January 2016

Supporting NGO: Deeksha Mahila Welfare Society

Organization structure: The company is managed by a CEO who was elected by the farmers, who is in turn governed by 10 Board Directors (Fig. 4.2).

Reason for establishing a FPO

- Ramabhadrapuram Market (the nearest market): Syndicate of traders formed leading to high exploitation of farmers.
- Trader defaulted payment after taking 20 tons of jaggery from eight farmers.

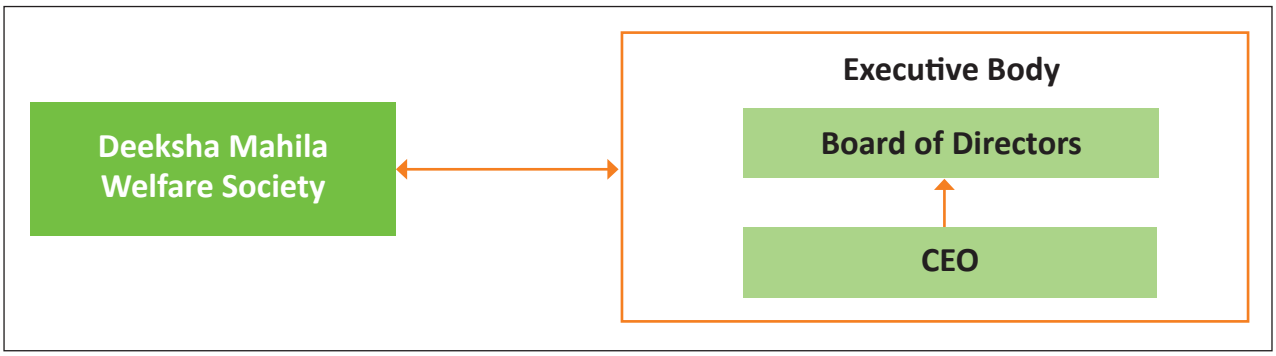


Figure 4.2. Organization structure.

Activities

- **Exposure visit:** Ten farmers visited a jaggery factory in Jalgaon.
- Regional Agricultural Research Station (RARS), Anakapalle, scientists were called for a training program on methods to prepare jaggery naturally without using any chemicals.
- ₹2.70 lakh share capital has been collected and ₹2.3 lakh is yet to be collected.
- The farmers in this region have been preparing jaggery in their houses for years. A few farmers own the equipment for preparing jaggery and the other farmers give them their sugarcane produce. In the end, they split the cost after selling the jaggery.
- **Market linkages:** A total of 600 tons of jaggery has been procured by the FPO from members. A Hyderabad-based organization that markets vegetables is interested in procuring it.
- Farmers are being encouraged to sell their produce at the nearest temple market instead of selling it to wholesale traders.

Activities planned

- Sheds are being constructed for storing vegetables and preparing and storing jaggery.
- Online marketing of commodities through website.
- Vendor van being procured with the support of the Department of Horticulture.
- An NGO from Vizag has come forward to help the FPO market its vegetables.
- Large complexes have been identified to market the vegetables. The vendor van will be used to reach areas outside these complexes.
- Marketing at Rythu Bazar and opening stalls in various markets.
- Market yard under construction
    - ½ acre of land taken on lease for 10 years
    - Construction will be completed by the end of January
    - Plan to use it for procuring vegetables from members and to grade and market them.

Jaggery preparation: 1 ton of jaggery requires more than 2 tons of sugarcane (Fig. 4.3).

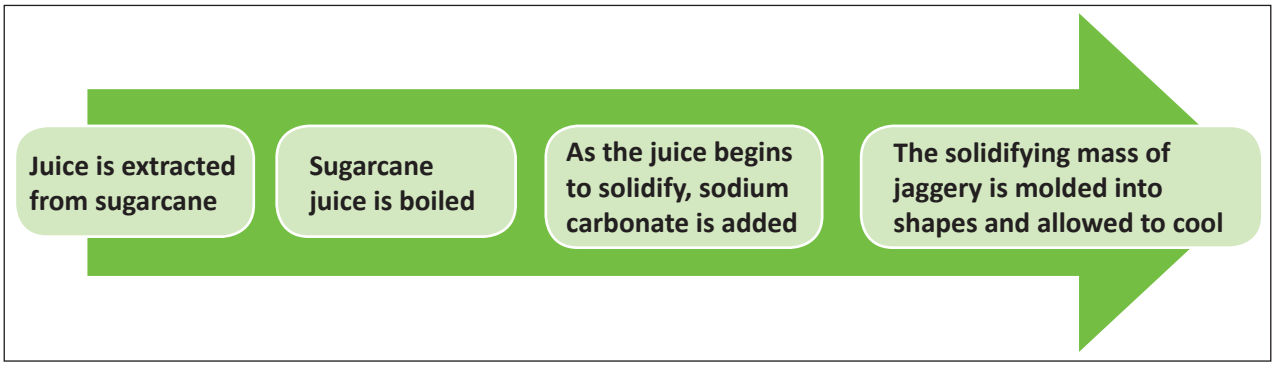


Figure 4.3. Jaggery preparation process.

Cost of jaggery production	
Cost of jaggery:	₹5000–6000/ton
Sugarcane cultivation cost:	₹48,000–50,000 (including seed costs, inputs and labor)
Average yield:	35–40 tons/acre
Sugarcane selling price in sugar factory:	₹2,300/ton
Income from jaggery:	~ ₹1,00,000/acre
Net profit:	₹50,000/acre

FPO analysis

The FPO has taken many steps to get sheds constructed, has connected with organizations to help in the marketing of vegetables but the FPO lacks a fixed business plan with concrete steps to take in order to make the most optimal use of the obtained resources. Even though an organization has lent a helping hand in marketing of vegetables, the FPO needs to prepare a solid plan as to where and how to market the vegetables using all the available resources.

5. Vizianagaram Coconut Producer Federation

Visit date:	21/12/2016
Commodity:	Coconut
CEO / MD / President	Mr Mongam Srinivas
Board of Directors:	5
Number of members:	~ 1500
Area under FPO:	7500 acres
Average land parcel:	~ 5 acres
Location:	Pusapatirega (Figure 5.1)

Figure 5.1. Location of Vizianagaram Coconut Producer Federation.

Coconut Producer Company's 3-tier structure

5000 trees and 20-25 members = 1 Coconut Producer Society

↓

10,000 trees = Coconut Producer Federation

↓

10 federations and 10,00,000 trees = Coconut Producer Company

Functions of society, federation and company are the same. The only difference is the scale of operation.

Registration: As a society – 2013
As a federation – 2014
38 societies registered ~ 1200 farmers. Ten societies are ready for registration.

President: Mr M Srinivas – He belongs to one of the *Zamindar* families of the area who were responsible for the spread of coconut plantation in the region long time ago.

Farmers in the region own coconut farms from ½ acre to nearly 600 acres. The FPO was registered after Hudhud cyclone destroyed farms.

Activities

- Awareness programs for coconut development.
- Coconut Development Board benefits are given to farmers through the federation.
  - Subsidies made available to the farmers:
  - Free inputs: Coconut Development Board provides farmers with free fertilizers for 1 ha per farmer. The federation helps the farmers to register and get such benefits. Farmers from 18 societies have received the benefit. Twenty societies are yet to get.
  - Area expansion programs, etc.

Coconut markets: Andhra Pradesh's markets are Vijayawada, Visakhapatnam and Hyderabad. Rates in these markets are > ₹30

Raipur is a big market in India along with Calcutta and the really big market is Mumbai. Rates range between ~ ₹26–30.

The federation president confidently stated that in Pusapatirega *mandal* alone of Vizianagaram district, which is well known for its coconuts, the plantations cover close to 2700 ha, but according to official records of the horticulture department of the district, the total coconut plantation in the district is 2371 ha.

Crop details: Compared to Amalapuram coconut, the Vizianagaram coconut is preferred as a tender nut (*bondam*) in the entire state of Andhra Pradesh.

Varieties preferred:	**East Coast Tall**
Cost:	₹8–10/nut
Income to farmers:	₹50,000/acre/year
Cost of sapling:	₹280/tree
No. of trees / acre:	~ 50
Nearly 500 nuts/acre/month are sent to Raipur, Maharashtra, etc.	
Harvesting of fruits is done by traders and not farmers. There is no lack of labor for harvesting coconut trees.	

Challenges: Coconut has become a secondary income crop. Since it requires less management time and effort, the farmers plant a coconut plantation and once it is stabilized look for other sources of income. Therefore farmers are not keen on receiving benefits to improve yield and quality. They have to be pushed to collect the subsidies and schemes given by the Coconut Development Board.

Coir unit: The president of the FPO owns and runs a coir factory. It has three different units that have been functioning for the past 12 years. Coconut fiber is collected from the surrounding farmers and coir products, ropes, etc., are prepared. The unit owns two tractors (one/unit) which collect the coconut fiber from farmers within a 40 km radius. Thus the unit stays in constant touch with the farmers.

The factory produces uncurled coir which is used as a raw material in coir curling units which then provides it to coir mattress factories.

The industry procures the coconut husk at a rate of ₹0.25/nut and per tractor 5000 nut husks are purchased in one trip. On the whole 40,000 nut husks are purchased per day.

After manufacturing ropes and uncurled coir, the waste (coconut pip) is sent to the nearest brick manufacturing unit where it is used as raw material.

Coir door mats were a major commodity prepared at the factory, but due to shortage of labor for weaving the mats, production had to be cut down.

Cost of total unit: ₹1 crore

The FPO president also owns and runs a coconut nursery of East Coast Tall (ECT) variety plants. Currently, the nursery has 30,000 saplings of ECT. Though there is no lack of labor for harvesting coconuts on a monthly basis, the availability of daily labor to look after the farms has become scarce. Villagers prefer going to National Rural Livelihoods Mission (NRLM) and Mahatma Gandhi National Rural Employment Guarantee Scheme (MNREGS) work rather than work in farms.

Analysis: The FPO is yet to start its full-fudged of activities such as crop improvement, market connections, etc. The FPO seems to lack a plan on how to proceed further. It seems settled in the role of helping farmers gain government subsidies. Since the selling price of coconut is quite profitable for the farmer, the FPO seems slack on the steps it can take to improve farmer's profitability. It needs a plan on further steps to take and a push on how to enhance the quality and quantity of the crop as well as the profitability of farmers.

6. Chethana Groundnut FPO

Visit date:	17/1/2017
Commodity:	Groundnut
Chairman	Yelamanda
CEO / MD / President:	Ms Uma Devi
Board of Directors:	6
Number of members:	60
Number of villages:	3
Area under FPO:	~100 acres
Average land parcel:	1–2 acres
Location:	Kothapatnam, Ongole (Figs. 6.1 and 6.2)

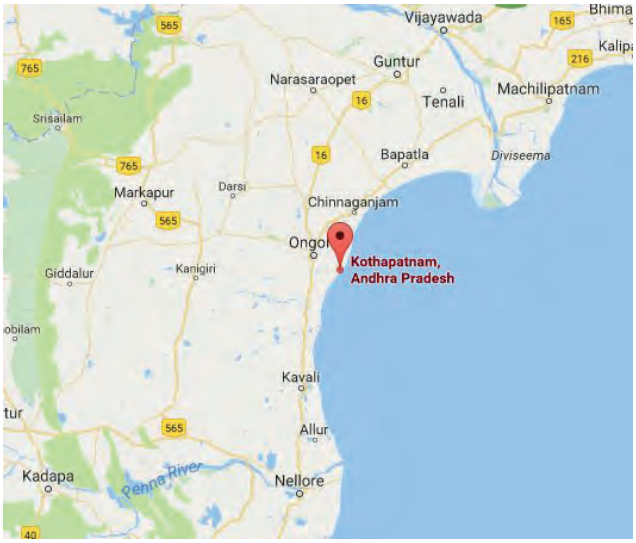


Figure 6.1. Location of Chethana Groundnut FPO.

Figure 6.2. FPO office.

Supporting NGO: Effort

NGO coordinator: Ms Uma Devi

Objective: To improve the quality of the produce by introducing new crops for crop rotation and increase the income of marginal farmers by connecting them directly to the market.

Organization structure: Chairman, six directors (one for every 10 members), CEO (appointed by directors), 12 promotors (one for every five members) (Fig. 6.3).

Roles and responsibilities

Chairman

- To oversee that all the activities are being conducted smoothly.
- To chair the monthly board meetings and decide on a course for the FPO after taking the opinion of all the directors into consideration.

- **Different role:** To take an active part in decision-making and problem-solving activities of the FPO and in setting the direction for the functioning of the FPO.

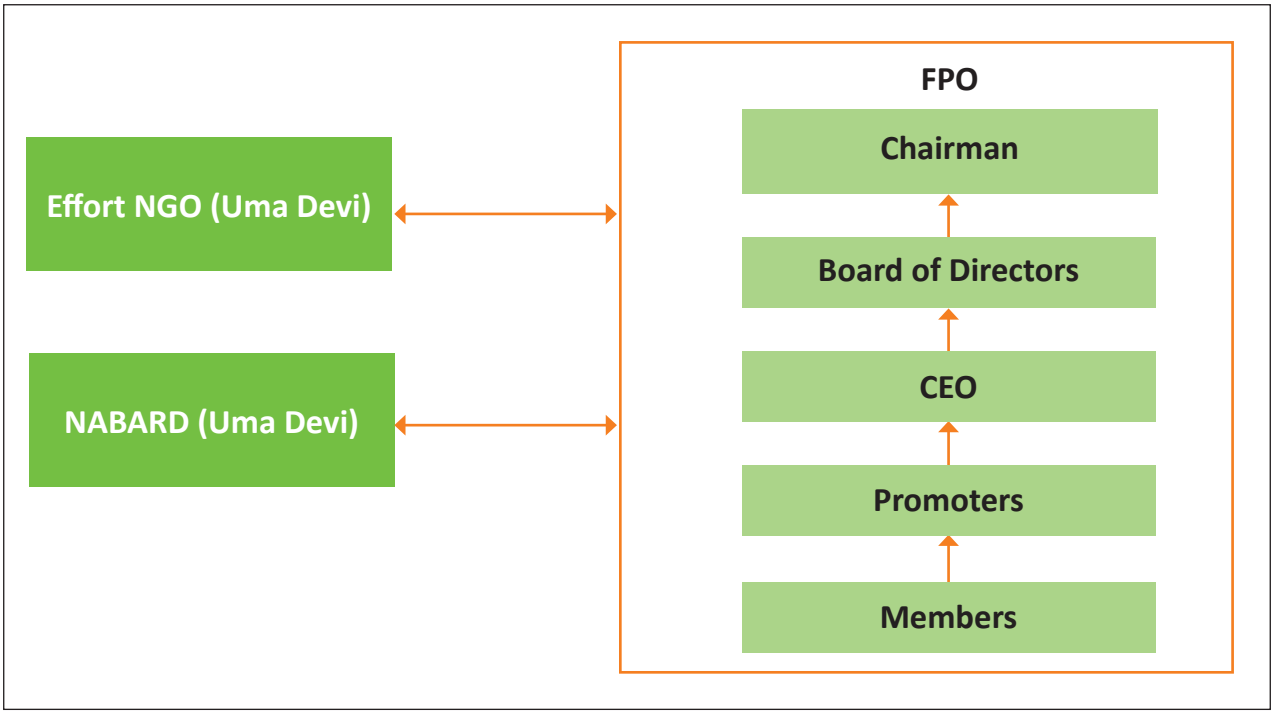


Figure 6.3. Organization structure.

CEO

- To implement decisions taken by the Board and the chairman.
- To take necessary steps to take the FPO in the direction decided by them.

Different role: To promote the FPO in the village and surrounding areas and get new members enrolled in it.

Effort: To provide the FPO with a coordinator who is responsible for supporting the FPO in all its functions.

Basic functions: The FPO mainly carries out three main functions (Fig. 6.4):

- **Quality improvement:** Prakasam district is low on soil fertility and rainfall because of which the yields are low, leading to low income of farmers. The land here is extremely exploited. Also sandy soil leading to low retention of water has not left the farmers with any other alternative for crop rotation for the past 20 years because of which they harvest groundnut continuously. In addition, soil erosion is high and the farmers still practice outdated practices of cultivation.

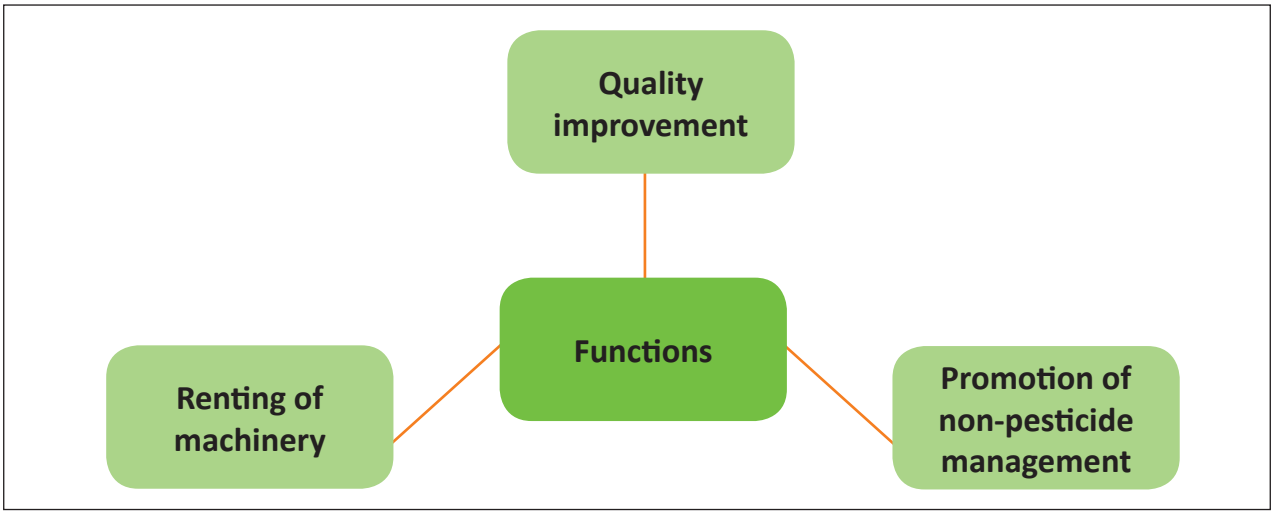


Figure 6.4. Functions of Chethana Groundnut FPO.

The FPO is currently experimenting with crops like sweet corn in demonstration plots of interested members as alternate crops for crop rotation. Also with constant interaction with scientists, the FPO is trying to get better varieties and conduct workshops for farmers on farming techniques for sustainable cultivation.

- **Promotion of Non-Pesticide Management:** The FPO strongly supports the principles of Non-Pesticide Management (NPM) (Figs. 6.5 and 6.6). Therefore it promotes the use of products such as Panchagavya which works as a growth enhancer and Brahmastram which works as a pesticide. The FPO's CEO has her own shop where she prepares and sells these products. She also set up an outlet at the FPO office where she gives commission to the FPO for the items sold. To demonstrate the benefits of NPM, the CEO had a demonstration plot planted in half an acre of one of the interested Board Members.
- **Renting of machinery:** The FPO has two sprayers and caters to the farmers in the area who can make use of the sprayer by paying a rent (Fig. 6.7). This rent is ₹100 for members and ₹150 for non-members. To rent the same sprayer outside of the FPO costs close to ₹200. The FPO also has plastic crates that the farmers can make use of when necessary for free. This activity was started in the second half of 2016 and the annual turnover needs to be recorded at the end of the financial year in 2017.

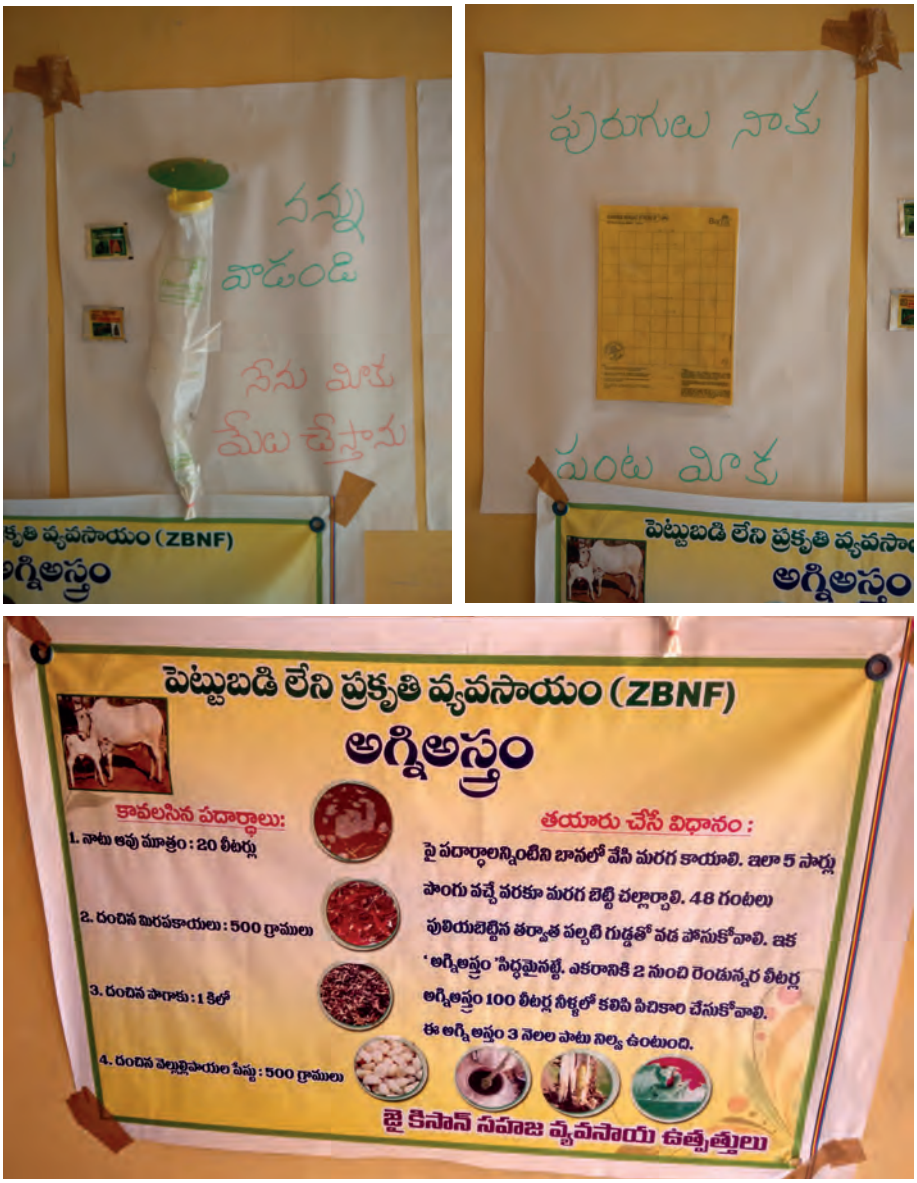


Figure 6.5. Charts and banner put up by the CEO to promote NPM and sustainable agriculture.

Figure 6.6. The FPO NPM demonstration plot.

Figure 6.7. The sprayer given for rent by the FPO.

Crop details	
Time period:	Twice a year – from October – February and from May – August
Yield:	30–36 bags/acre (1 bag = 25kg)
Input cost:	Minimum ₹50,000 (including lease)
Land lease cost:	₹30,000/year (₹15,000/season)
Selling price:	₹1,800/bag = ~ ₹54,000/acre
Maximum profit:	₹10,000
Minimum profit:	₹4,000

There is no market in the vicinity where the farmers can send their produce therefore middlemen come to the area and purchase the produce. The farmers are dependent on the middlemen for selling their produce and the middlemen exploit them and pay the farmers much less than the actual price of the produce.

FPO financial details

- Share capital collected: ₹45,000
- Share capital amount: ₹500–1000 / member
- Approximate monthly income from renting machinery: ₹8,000

Challenges

- The farmers in this area are marginal farmers who just (break even). Groundnut gives them the income they can survive on because of which they are reluctant to take a risk and try new techniques and crops. Despite suggestions given by scientists and various other stakeholders, the adoption of new techniques is extremely slow.
- Though the farmers are extremely proactive they are slow in trusting the FPO because of which mobilizing farmers is challenging.

7. Anjaneya FPO

Visit date:	23/1/2017
Commodity:	Pomegranate, watermelon, muskmelon (Delhi variety), grapes, banana and tomato
CEO/ MD/President	Mr Bhaskar
Board of Directors:	10
Number of members:	600
Villages covered:	60 (All over the district)
Area under FPO:	~5000 acres
Average land parcel:	10 acres (due to lack of water, farmers cultivate a part of their farmland).
Location:	Katnekalva, Anantapur (Figs. 7.1 and 7.2 a and b)

Figure 7.1. Location of Anjaneya FPO.

Figure 7.2. (a) Office of the FPO in Anantapur Rythu Bazar, (b) FPO office in Katnekalva.

Average land parcel of directors: ~50 acres each

Objective: To increase the profit of farmers by connecting them directly to major market recruiters and reducing the input cost by making inputs available at a much reasonable rate that what is being sold in most retail stores.

Organization structure: The activities of the FPO are overseen by the Managing Director, who is guided by the decisions taken by the Board of Directors (Fig. 7.3).

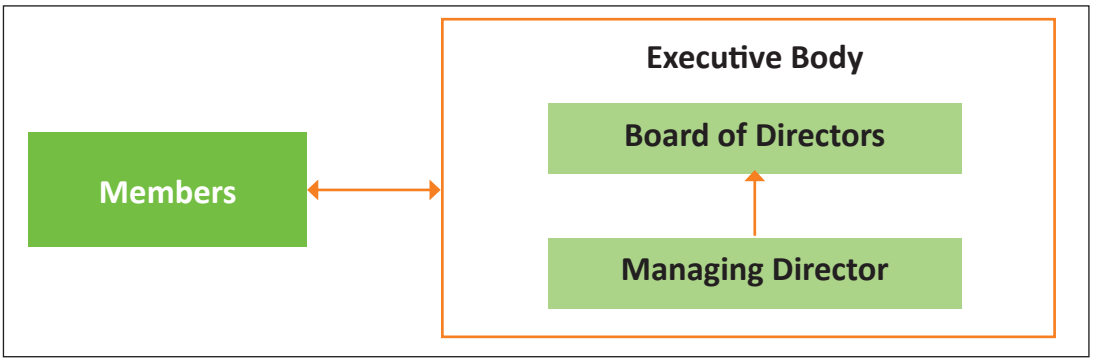


Figure 7.3. Organization structure.

Functions: The FPO carries out three major functions:

- **Exposure visits:** Four farmers visited the Vegetable FPO in Cheldiganipale on 18 December 2015 to understand a well-established system of marketing vegetables and they are planning to visit Coimbatore to see a grape-based FPO
- **Market linkages:** The FPO has set up a shop in the Rythu Bazar (Farmers Market) Yard where it sells the produce of its member farmers without any commission. This saves the farmers close to ₹20 per day that they usually pay to the agent who sits at the farmers' market to sell the produce on their behalf. This shop was given to the FPO free of cost by the Rythu Bazar.

  Big corporates such as Walmart, Big Basket, Spencer and More are regular buyers from individual farmers in this area. They individually buy around 250 kg each on a weekly basis. To make purchases more cost-effective these big firms usually buy collaboratively close to 1 ton of produce. They exploit less and are very fair in the calculation of weight and payment. They also give tips for quality improvement when they buy the produce. Overall the only overhead cost for the farmer is the labor cost. Prior to recruitment the buyers visit the farmer to check the quality and then set a price. Once the produce is delivered the amount is credited into the bank account of the farmer immediately.

  This system has been running for a long time with individual farmers, now it needs to be established through the FPO. Since the FPO is a collaborative entity it will become easier for these big firms to connect to all the farmers by staying in touch only with the FPO.

- **Inputs outlet:** The main reason the FPO was set up was to reduce the cost of farms inputs. The FPO has obtained the license to sell, farm inputs a store still needs to be set up.

Crop details: In Anantapur the cultivation of short-term crops is high. About 40% of the land is under long-term crops like pomegranate, banana and grape such as fertilizer and pesticides which are sold at high rates in the market while 60% is used for rotational crops such as melons and tomato. The major crops are mostly fruits which require high inputs. Since water is scare Israeli drip technology is used.

- **Crop period:** March – January
- **Crop market:** Since this is an area with high horticulture production, big players like Walmart and Reliance procure produce from farmers. After grading for quality, the produce is sold to various buyers. Price depends on size of the fruits, therefore small fruits are sold at the local markets.

Banana (raw) – *Aratikaya* (vegetable):	
Time period:	March – January
Selling price:	₹17,000/ton (sold to commission agents who collect commission and transportation cost from the amount payable)
No. of trees / acre:	1200
Yield:	~ 35 tons/acre
Income:	~ ₹5,95,000 /acre

- **Watermelon:** This is a three-month rotation crop. Watermelon is cultivated by covering the field with a mulching sheet which reduces infestation of pests and leads to lower water consumption. Watermelon trade is highly exploited by middlemen. Produce is mostly sent to Hyderabad and Bengaluru markets where agents are notorious. As their pricing is not fair, farmers lose most of their profit. Watermelon crop bears fruit from 55–70 days after planting.

Selling price:	₹6/kg
Income:	₹ 90,000/acre
Yield:	15 tons/acre.
Input cost:	₹60,000/acre

The nearby large markets are Bengaluru, Hyderabad and Vijayawada. Watermelon and muskmelon require 300 g of seed/acre. Depending on the brand of the seeds; the cost can vary from ₹25, 000 to ₹1 lakh. This is a high-risk crop therefore income is high but input cost is also high.

Muskmelon (Delhi variety)	
Yield:	25 tons/acre and the entire crop is directly sent to Delhi by the farmers.
Transportation cost:	₹15/kg
In this crop, the farmers either gets high profit or total loss. There is no in-between scenario.	

- **Tomato:** The farmer cultivates tomato according to the demand. This area has high tomato cultivation because of which various collection centers are present where traders collect tomatoes through auction. In spite of the auction process, the traders form unions and exploit the farmers.

Selling cost:	₹17/kg
Cost of 1 sapling:	₹50
No of saplings / acre	12,000
Overall plantation cost:	Rs 6,00,000/acre
Labor cost:	₹50
Transportation cost:	₹10
Commission to traders:	₹25
Input costs (fertilizers + pesticides):	~ ₹50,000
Yield:	50 tons / acre
Income:	17 x 1000 x 50 = ₹8,50,000
Profit:	~ ₹2,00,000

- **Grapes:** The market for grapes in the region is low. Nearby big markets of Bengaluru, Hyderabad and Chennai are good for grapes. Therefore grapes are sold to middlemen who set their own price and exploit the farmers. Horticulture marketing is a huge problem in Andhra Pradesh.

Lifespan:	30 years
Selling cost:	₹25–40/kg
Fruits start 1 ½ years after plantation and need to be harvested every 6 months.	

Pomegranate	
Lifespan:	30 years
Yield:	4–6 tons
Selling cost:	₹400/10kg box
When sold to agents a minimum of 250 g/fruit is the quality that is expected.	

History: The inputs sold by suppliers are sold at a profit margin of 25% making them unnecessarily expensive for small farmers. But when large farmers buy products in bulk they are given a huge amount of discount making it more economical. Hence the one at loss is the small farm holder. Hence 40 pomegranate farmers who buy pesticides, fertilizers and vermicompost worth ₹30 lakh for close to 50 acres each, started to buy inputs for small farmers to help them get inputs at a lower price. Slowly people got interested in the concept of cooperative procurement of inputs and marketing of produce and the idea of setting up an FPO started.

Soon an FPO was registered and an office was set up in the Rythu Bazar compound which was allocated to the FPO free of cost by the Rythu Bazar Union. Further, a main office with a computer was set up in Katnekalva which is 7 km away from Anantapur in on a 1-acre plot leased out to the FPO free of cost by the Managing Director. The FPO also set up an outlet in the Rythu Bazar complex where it sells the produce of its member farmers at zero commission, saving the farmers ₹2/kg/day, given to the labor for sitting at the Rythu Bazar on behalf of the farmer. Since this FPO was started by a group of large farmers it has good connections.

Further, the NABARD Assistant General Manager (AGM) is highly active and is pushing FPOs to apply for loans, but most of the FPOs in the area are still in the initial stage of establishment. This is one of the very few FPOs that is doing good work in connecting with the market. Therefore the FPO maintains good relations with the AGM and plans to apply for a loan for constructing a bigger building in the office area for storage of the produce to be marketed.

FPO financial details

- Minimum share capital of ₹1000 collected from 300 farmers.
- The FPO has sold the shares at ₹10/share and depending on the amount paid, the farmer is given the respective number of shares. There are farmers who even paid ₹10,000.
- Currently, the FPO is awaiting the release of funds by the horticulture department.

Future plans

- Currently members are being registered and being given identity cards.
- They plan to set up a fertilizer shop and a vegetable delivery system in a structure similar to that of the Cheldiganipalle vegetables FPO.
- Also in the 1 acre of land leased to the FPO by the Managing Director, they plan to construct a shed for buying and grading produce.

Challenges

- Anantapur farmers are very quick in taking decisions and very bold when it comes to spending but they lack proper financial support.
- Though the horticulture department is extremely interested in FPOs, the entire process is slow as the lower level officers lack the necessary interest and focus. Few officers show interest and help in the processing of documents and support the FPOs. Therefore the allotment of funds to the FPOs takes a long time thereby slowing down processes.
- The middlemen do not come when the farmers call them at harvest. Delays result in buying the produce for a lower price.

8. Chinnaogirala Vegetable FPO

Visit date:	16/10/2016 – 17/10/2016
Commodity:	Little gourd, cabbage, yam (*kanda*)
CEO / MD / President	Mr Shivaji
Board of Directors:	10
Number of members:	Continuous members 11, seasonal members 250
Villages covered:	2 (Chinnaogirala, Peddaogirala)
Area under FPO:	Continuous: ~ 40 acres; seasonal: ~ 300 acres
Average land parcel:	1 acre
Location:	Chinnaogirala (Fig. 8.1)

Objective: To provide farmers a place to sell their produce and to improve the profitability of farmers.

Location: On the highway from Vijayawada to Machilipatnam near Vuyyuru.

Organization structure: The activities of the FPO are overseen by the Managing Director who is guided by the decisions taken by the Board of Directors.

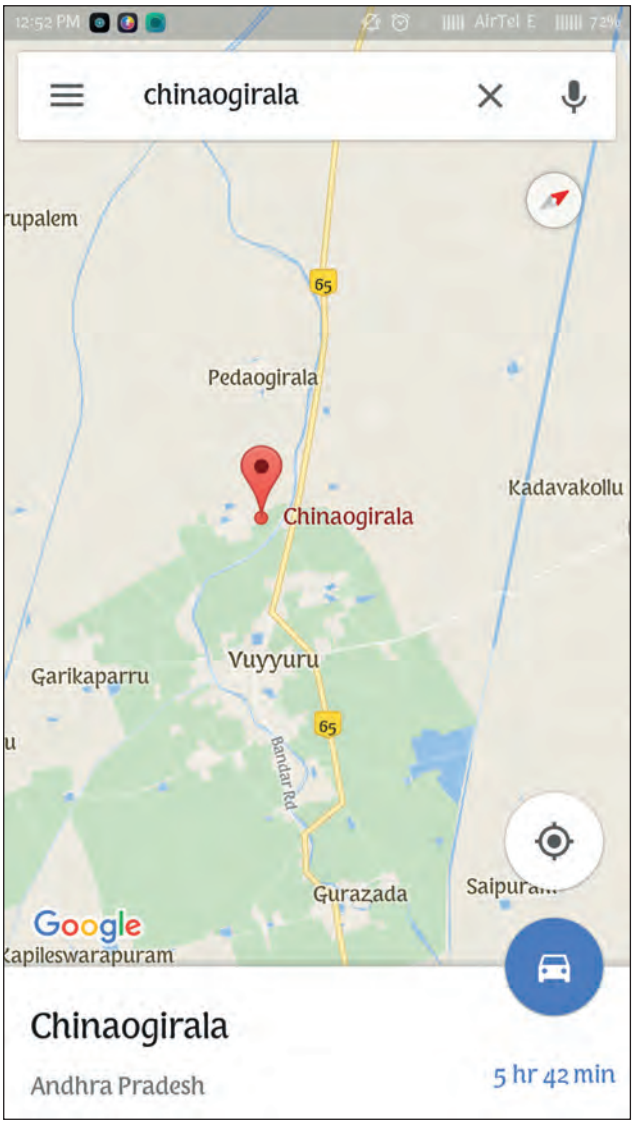


Figure 8.1. Location of Chinnaogirala Vegetable FPO.

Basic functioning: The farmers bring their produce to the FPO office. The produce is weighed and sent to various outlets such as Rythu Bazar, wholesale market auction, Vijayawada market, etc. In the end the net profit made from all these places is averaged out among the farmers (Figs. 8.2, 8.3 and 8.4).

Currently only four to five regular farmers sell their little gourd produce which is a non-seasonal crop through the FPO; therefore the FPO deals with approximately 30 tons of produce per year. In March (2016), when the FPO had just started functioning, a lot of member farmers sold their produce through it. March is the harvest time for cabbage and the FPO dealt with close to 150 tons of it worth approximately ₹50,00,000. This generated ₹50,000 for the FPO.

Farmers receipt (for 10 bags)**:**
490 kg at ₹12/kg: ₹5880

Deductions:
Commission (10%): ₹588
Labor (₹10/bag): ₹100
Association cost (₹1.5/bag): ₹15
Aaseelu (local tax) (₹6/bag): ₹60
Rent (₹30 / bag): ₹300
Total deduction: ₹1063

Amount given to farmers: ₹5880 - ₹1063 = ₹4817

Timeline

Year	Major pointers	Challenges
2015	• Registered as an FPO • Many farmers took part in the FPO activity in the first week • 10 farmers became regular members	Most farmers lack trust as FPO functions as an alternative commission store and does not add any extra value
2016	• Has 10 regular farmers • In season, >100 farmers brought their produce • Off-season only regular members are active	Trust issues persist

Challenges and steps to overcome them

- Most of the farmers are active only during the season and are inactive otherwise.
- Farmers lack trust in the FPO and just view it as another commission business.
- The FPO Head lacks clarity on how to gain the trust of farmers.
- The FPO is not benefiting the farmers much. It is not replacing any stage in the supply chain because of which the value added is very less. Therefore the farmers have little incentive to give up their regular trader to join the FPO.

History: The vegetable FPO was registered in 2015. In its first few weeks of functioning, it had many actively participating farmer members. But then after the initial trial, the farmers did not find any benefit in being connected with the FPO. On the contrary they saw the extra transportation of their produce to the FPO office as a drawback and hence did not continue with their active participation.

Board member perspective: The head and the board members are all related. Out of the 11-member team only four to five actively participate in the FPO activities. In the first season (summer 2016), the FPO was able to sell a lot of produce, worth about ₹25 lakh. However, most of them were cash transactions without any link to the bank because of which transactions worth only ₹10 lakh were officially registered.

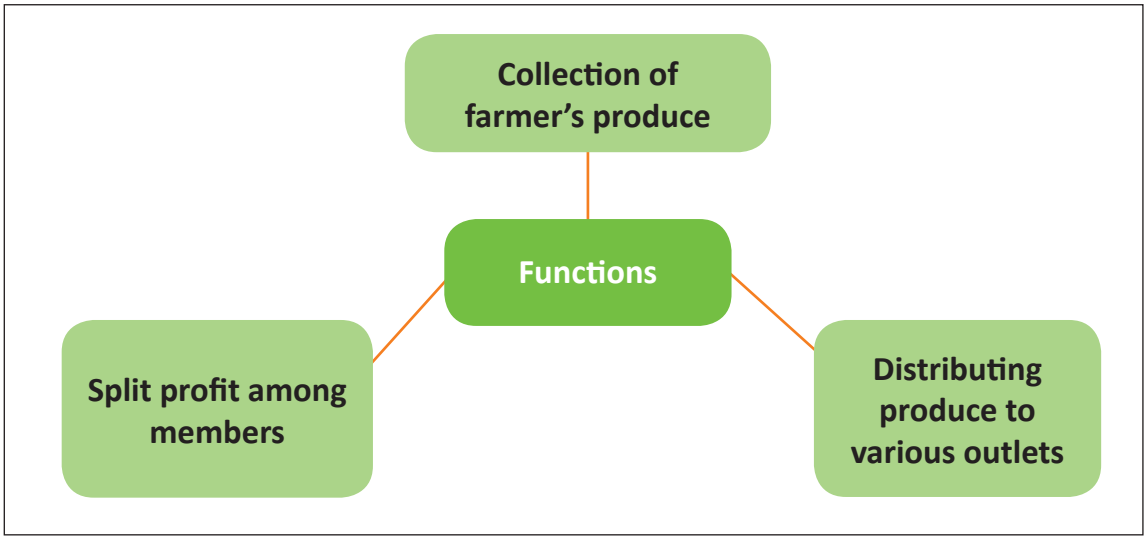


Figure 8.2. Functions of the FPO.

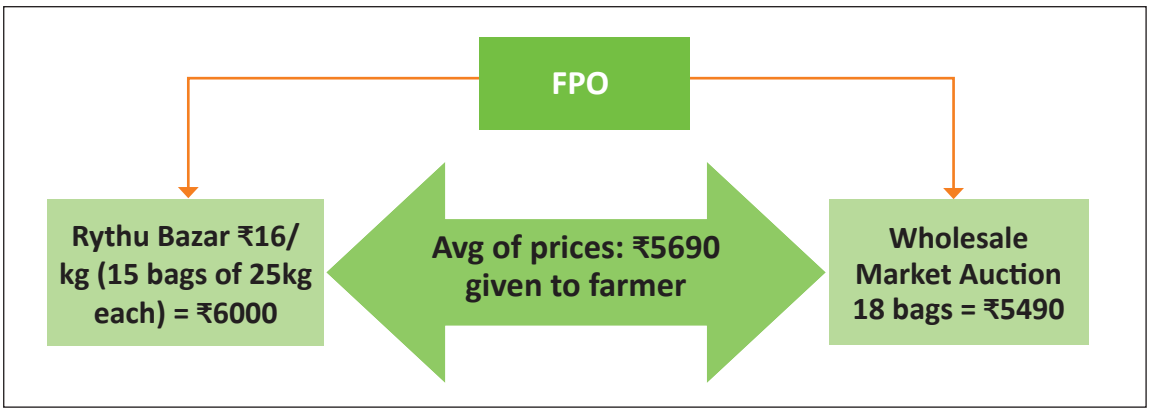


Figure 8.3. Method of farmer payment.

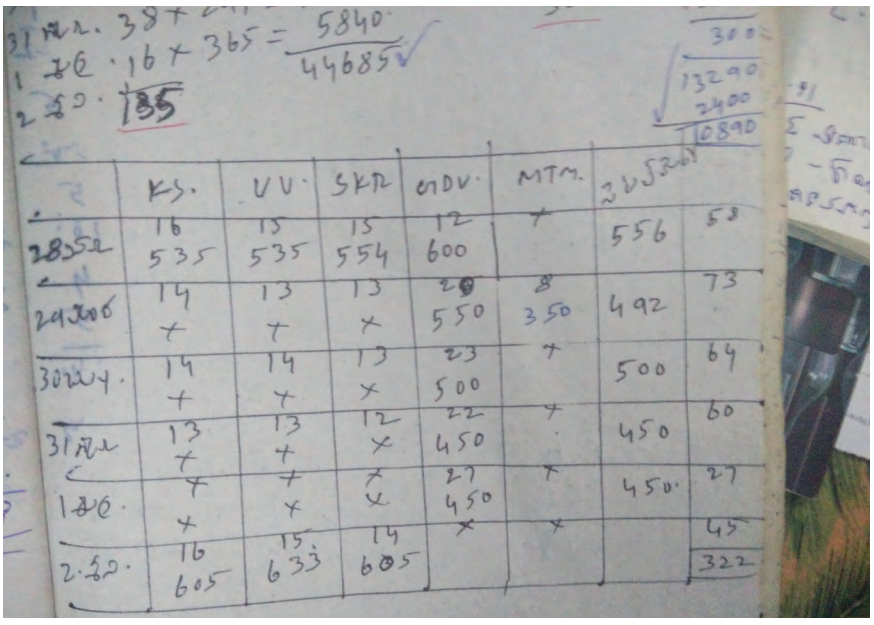


Figure 8.4. FPO daily logbook of the produce sent to various markets.

In the following season, none of the farmers came back to actively take part in the FPO. Since the members are less, the profit the FPO makes is also less. In a month, the FPO earns an average commission of ₹5000–7500 and the expenses include ₹2000 for office rent, ₹500 for electricity and the amount left to pay the workers is around ₹2500–5000.

Farmer perspective: The farmers do not consider this as a farmer producer company. Rather they consider the FPO head to be another commission agent. They fail to understand how they can actively take part in the functioning of the FPO and shape its activities according to their need. After taking part in the FPO for the first season, most of the farmers stopped participating in the FPO activity. Very rarely, when they have excess of produce, they drop it off at the FPO collection center. The entire FPO runs mostly on the 11 board members out of which only four to five members are active. All the other members very rarely sell their produce through the FPO.

Crop details

Current status: All the farmers actively participated in the activities in the first season after the FPO was set up. The timing of the harvest of cabbage contributed to the FPO making a lot of profit. At the time of the visit, the FPO was handling the unseasonal little gourd while waiting for the cabbage and yam (*kanda)* season to start.

Little gourd	
Preparation cost (setting up of a frame and growing the creeper onto the frame until the first harvest):	₹2,00,000–2,50,000
Time period:	2–3 years (3 is preferred)
1st crop yield (12 months after setting up):	750 kg/acre
After the first harvest, crop is harvested every week.	
2nd harvest onwards yield:	1 ton/acre
Damage of produce incurred:	~ 20%
Irrespective of the amount of produce harvested, an acre of land requires a minimum of 10 laborers to harvest the vegetables	
Labor cost:	₹120/person = ₹1200/week
Maintenance cost:	~ ₹1,00,000/year
2014 income of FPO head:	~ ₹5,00,000/acre
2015 income of FPO head:	~ ₹4,00,000/acre
Profit made:	~ ₹2,00,000–2,50,000/year

Yam (*Kanda*): High seed cost	
Season:	May – November (6 months)
Seed cost:	₹1,00,000–1,40,000/acre
Cultivation cost (weeding, transplanting, fertilizers, pesticides and labor costs) with seed cost:	₹20,000/acre
Yield:	18-20 tons/acre
Lease:	₹35,000/acre/year
Selling price:	₹2,00,000–3,00,000/acre
Profit:	~ ₹80,000/6 months
No wastage in this crop.	

Cabbage	
Seed cost:	₹1,500/acre
Initial cultivation cost:	₹3,000/acre
Labor cost:	₹6,000/acre
Lease:	₹20,000/year
Cabbage is initially cultivated in a nursery and then transplanted into the field.	
September–November cultivation cost:	₹1,500 for transplanting ₹2,500 for weeding
January–March cultivation cost:	₹3,000–5,000 for fertilizers ₹5, 000 for pesticides
Total cultivation cost:	₹25,000/acre
The market for cabbage is extremely dynamic with huge price variations.	
Selling price:	₹10,000-1,00,000/acre produce
Cultivation damage:	10%
Pest damage:	20%

Farmer satisfaction: The FPO functions like a regular commission agent and the farmers do not find any extra value in being a member of the FPO. The commission charged by the FPO is equal to the commission charged by a registered commission agent. Therefore most of the farmers are highly irregular and actively participate only during the peak cultivation season of vegetables.

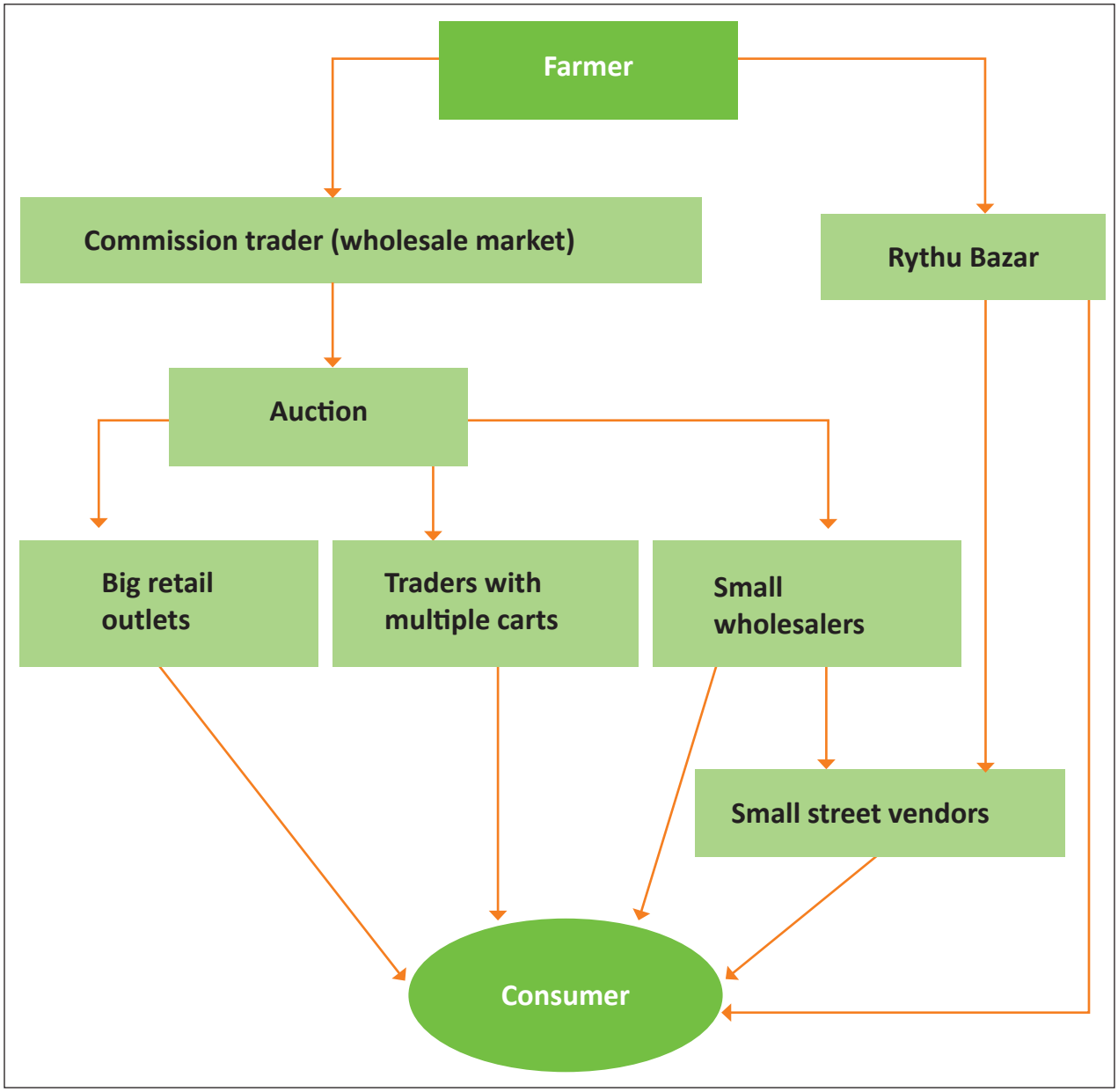
Impact (targeted v/s current achievement): The FPO was set up to bring in more transparency into the vegetable trade but that is not happening yet. The FPO is just functioning as a replacement for the existing commission agent system because of which it is unable to provide the farmers any incentive to become a part of the FPO. The extra amount of ₹10 to be paid for FPO membership is actually acting negatively. Therefore, to achieve the targeted impact, the FPO needs to change its trading method to bring about more transparency ,which will help gain the trust of the farmers.

Future goal and improving profitability: The FPO plans to get a license for selling seeds, pesticides and fertilizers to gain the trust of the farmers. In doing so, it aims to utilize the profit made from the retail business to further bring transparency into the trading system of the FPO. If implemented correctly, this new step can succeed in attracting more farmers into becoming regular members.

Clarity on functioning: Though the FPO head has little clarity and vision on how to improve the trust of farmers, he has clarity on how to use the retail license to sell seeds, fertilizers and pesticides to benefit the FPO and to attract more farmers.

Key learning: Vegetable trade is still extremely unorganized. The maximum profits in the trade are taken by the commission agents, who auction the produce, while other stakeholders just break even. Also, the risk of loss also falls least on the commission agent and the most on the farmer and the end seller who sells it directly to the consumer. The FPO needs to bring about more organization into the value chain system so as to ensure there is value addition for farmers at every stage.

Vegetable supply chain



9. Sri Vighneshwara FPO

Visit date:	18/10/2016, 19/10/2016
Commodity:	Banana – (*Karpura Arati, Chakkarakeli, Pacha Arati* – Grand Naine)
CEO / MD / President	Mr Chandra Mohan Reddy
Board of Directors:	Mr Srinivas Reddy and Mr Anji Reddy
Number of members:	216
Villages covered:	~ 15
Area under FPO:	~220 acres
Average land parcel:	1 acre
Location:	Chagantipadu village, Vijayawada (Fig. 9.1)

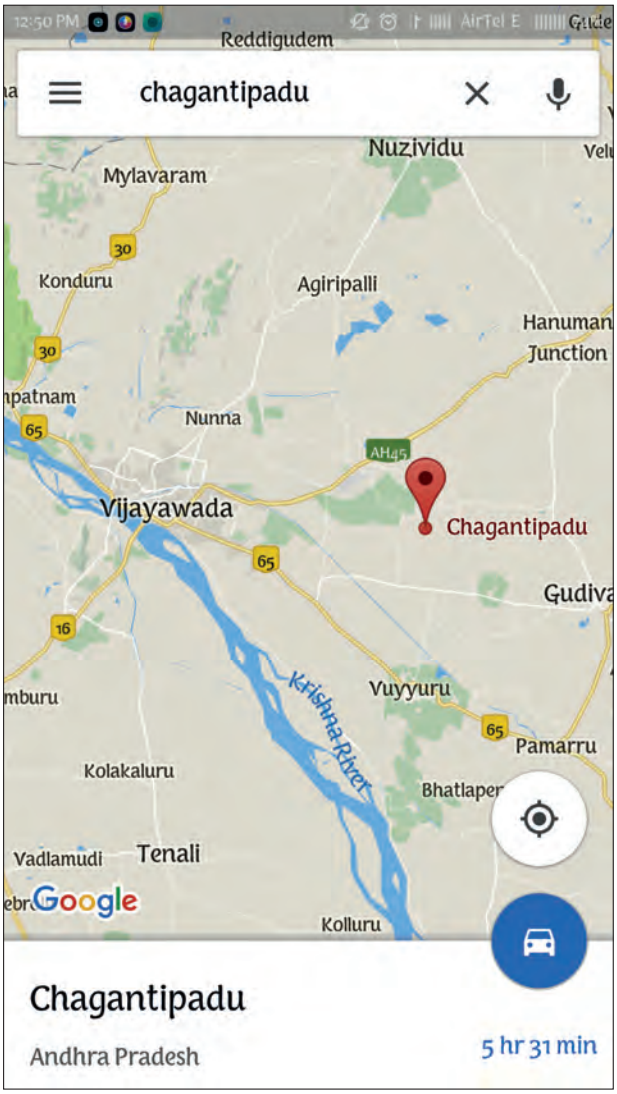


Figure 9.1. Location of Sri Vighneshwara FPO.

Objective: To reduce the exploitation of banana farmers at the hands of the trader and to improve farmer profitability by achieving transparency in the entire transaction system and improving the farmer's bargaining capacity.

Organization structure: The operations of the FPO are overseen by a Managing Director who is supported by two board directors (Fig. 9.2).

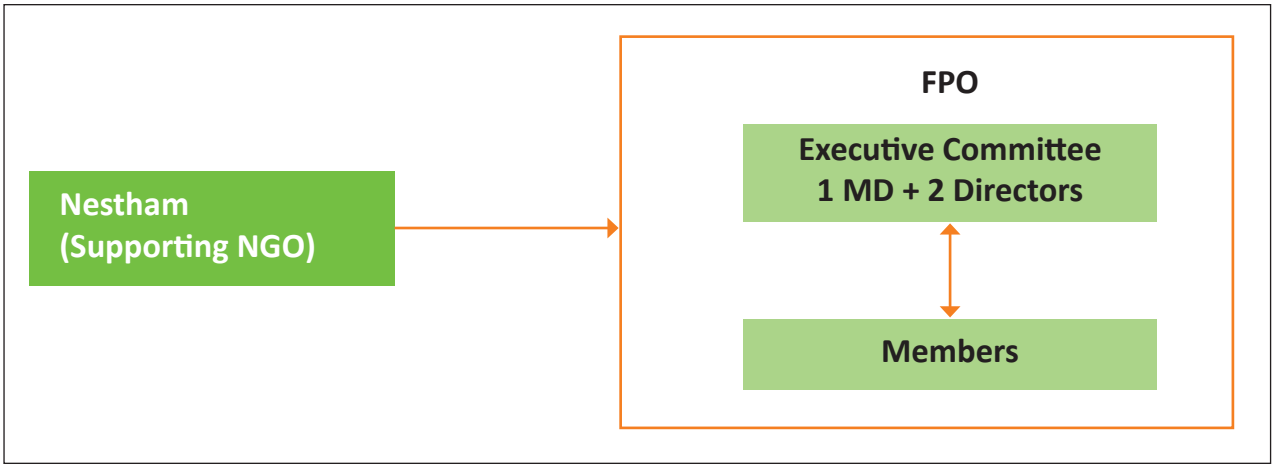


Figure 9.2. Organization structure.

Roles and responsibilities

Managing Director

- Facilitate auctions;
- Manage accounts and finances;
- Conduct meetings with directors to discuss key steps taken by the FPO.

Directors

- Manage the auction process;
- Participate in the meetings;
- Participate in discussions regarding key steps taken by FPO.

Members

- Register as a member at the FPO;
- Participate in the auction based on the need;
- Collect the receipt and total amount after debiting the commission from the FPO.

Basic functioning: The farmers bring their weekly banana produce to the FPO market yard. Then the traders participate in the auction for individual farmer lots divided into different grades. The auction is conducted twice a week, every Monday and Thursday (Fig. 9.3).

In peak season, the FPO auctions around 2000–2500 banana bunches/auction. In the off-season, it auctions around 1200–1500 banana bunches/auction.

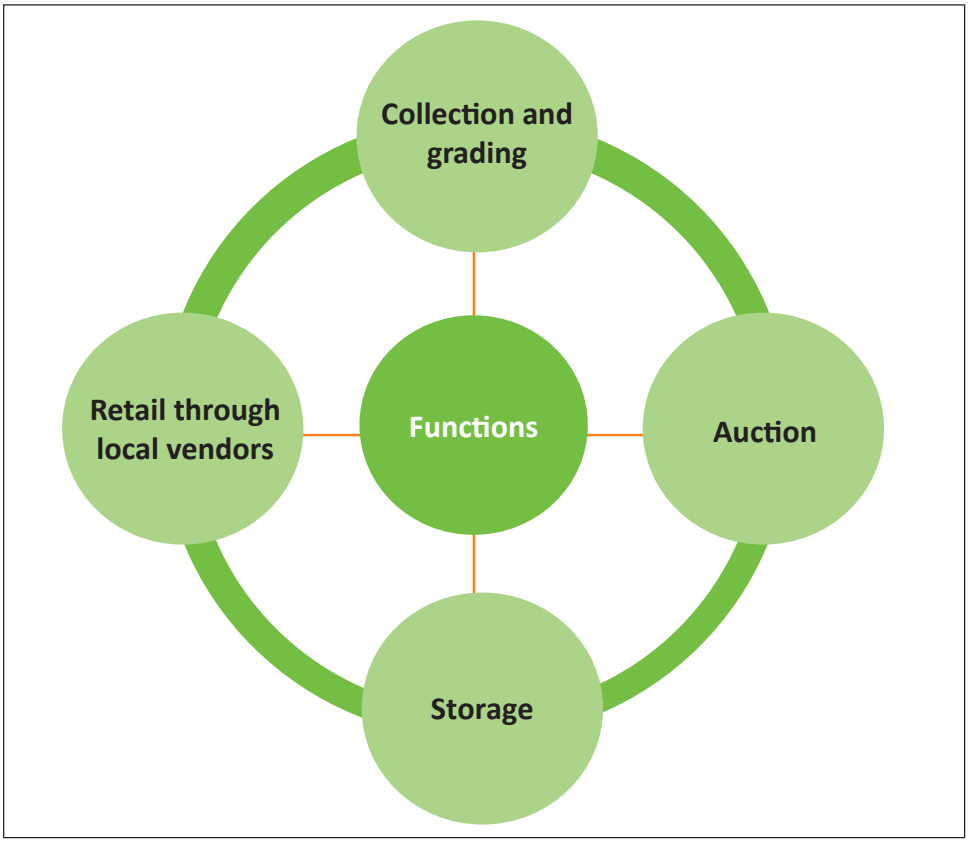


Figure 9.3. Functions of the FPO.

Auction procedure

Average number of traders/auction: 20

Average number of farmers/auction: 30

Average number of banana bunches/auction: 1200

- The FPO vehicle goes to the banana orchards and collects the bunches (Fig. 9.4).

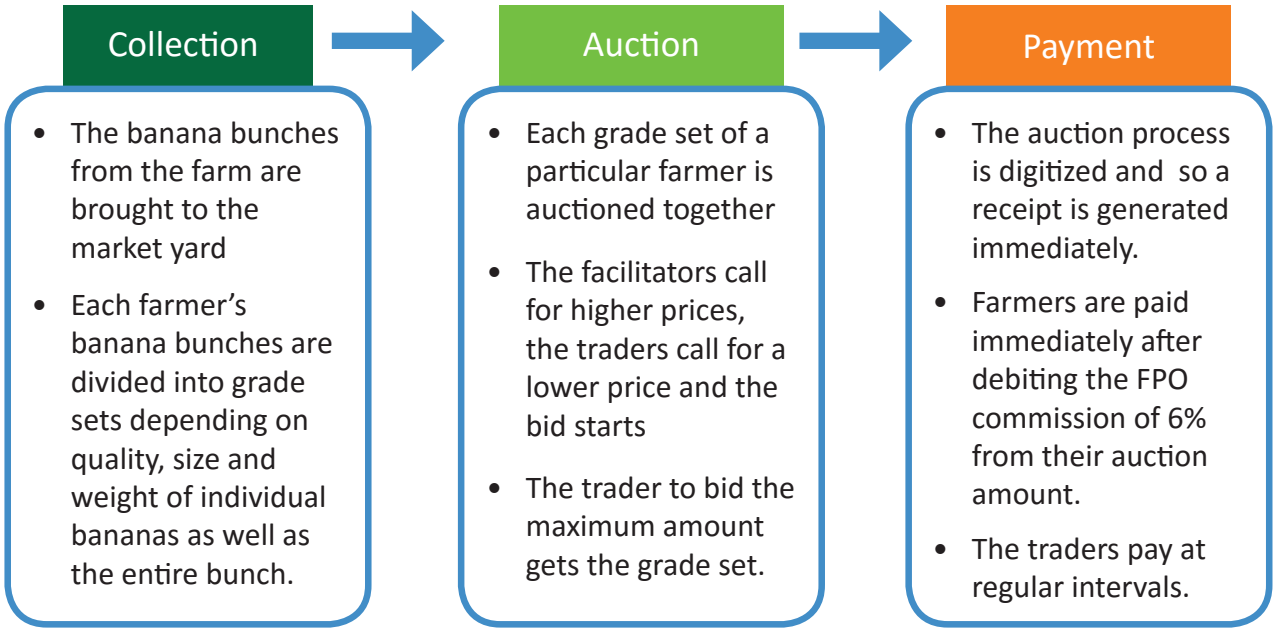


Figure 9.4. Auction process flowchart.

- The banana bunches are brought to the FPO market yard grouped according to the farmer's name and then separated into different grades depending on quality and size of the bananas and weight and size of the entire bunch (Fig 9.5).
- Each grade set of a particular farmer is put up for auction as a unit and the traders participate in the auction.
- The head usually calls a high price, then the farmers come up with a minimum price and the auction starts from the lower price.
- The farmers maintain eye contact with the head and keep informing him about their interest in buying the bunch. Once they feel the price is beyond them they move on and the bidder to maintain eye contact till the end gets the set.
- The bidder to pay the highest price gets the particular grade set of a farmer.
- The head usually has a minimum selling price in his mind for a particular set. If the auction amount does not reach his expectations, he decides not to sell it at the auction and keeps it aside to sell it later on.
- The farmer is paid the entire amount totaled after auctioning all his banana bunches after deducting an FPO discount of 6% on the total amount.
- The trader pays the FPO after he finishes selling the banana bunches at regular intervals such as every two days, once a week, etc.
- The farmers are charged separately for the labor cost involved in the transportation.

They are charged ₹2/bunch for loading and unloading the banana bunches.

They are charged a varied cost depending on the distance for cutting the banana bunches and transporting them to the market yard.

Same village: ₹6/bunch

Adjacent village: ₹8/bunch

>10 km away: ₹10/bunch

Different districts: ₹12/bunch

- The traders are also charged a labor cost of ₹2/bunch for loading and unloading the bananas. External transport to the trader destination is arranged by the FPO and paid by the trader.

Example: If a farmer sends 50 banana bunches (25 of grade I, 13 of grade II and 12 of grade III), each bunch is grouped together according to its grade and auctioned. The total amount of all the three sets is given to the farmer after separating the FPO commission of 6%.

Figure 9.5. Markings of grade on banana bunches.

Other facilities provided

- The FPO has a market yard where it collects the banana bunches of all the farmers and auctions them. This yard was funded by NABARD and inaugurated in September 2016.
- The FPO has a vehicle that brings the farmers' produce from their respective orchard to the FPO market yard.
- The entire auction process is digitized.
- During the auction, the head selects the trader that has bought each grade set. At the end of the auction, the software directly generates farmer/trader receipts that can be printed and given (Fig. 9.6 a,b,c).

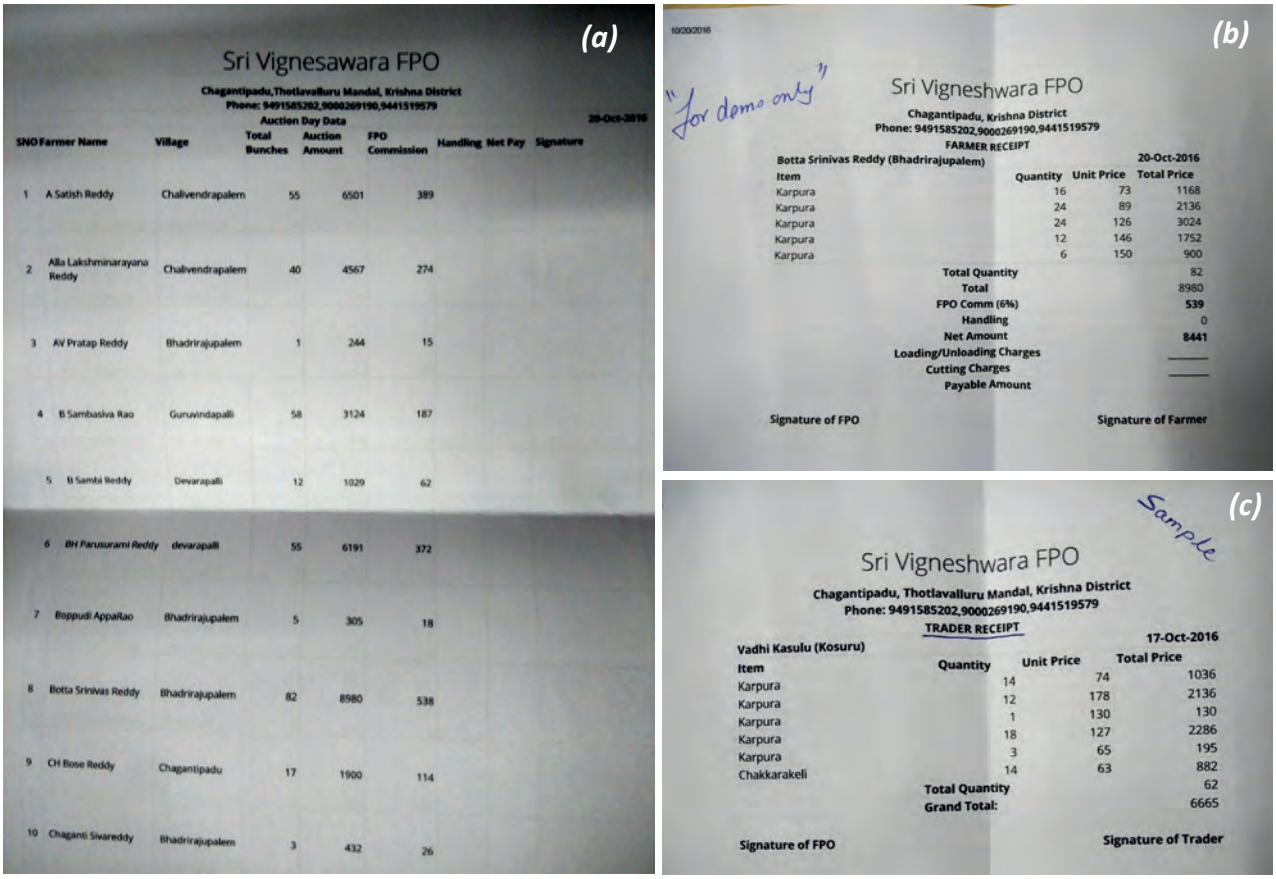


Figure 9.6. (a) Consolidated auction data report; (b) Farmer auction receipt; (c) Trader auction receipt.

- NABARD is soon sponsoring a ripening chamber in the FPO market yard building.

History: It took a lot of effort and dedication from the active directors to set up this FPO. There was a lot of negative publicity to stop it from being set up. This problem persists, but with a lot of effort, the FPO heads were able to motivate more than 200 farmers to become active members.

Initially the motive of the three people actively taking part in setting up the FPO i.e. the head and the two active board members was questioned by the villagers as they did not own any land. To overcome this problem, two of the board members rented farmlands and set up banana orchards of their own.

To stop farmers from being associated with the FPO, traders bought the banana bunches at a higher rate than usual to reduce the number of bunches given to the FPO. During that time the board members purchased other farmers' bunches and sold them along with their own at the FPO without any profit. Gradually, a base of traders enough to conduct auctions was formed. After that the nearby farmers became active members of the FPO.

The FPO also ran a direct retail outlet by linking with local shop owners. They also supplied bananas directly to events/functions, etc. But as the FPO got more established and set up an auction center they could not manage the retail outlet and discontinued it.

In September 2016, they constructed their own market yard to auction the bananas and also had software developed by a Hyderabad-based startup Keansa Solutions to digitize the auction process.

Timeline

Year	Event	Challenge
2014	Plan to set up FPO The Board of Directors leased land in the village and started cultivating banana orchards to gain the trust of farmers. They procured bananas from known farmers and sold them to traders as a unit.	Lack of trust in the Board of Directors Traders bought bananas from farmers at a higher price to prevent the FPO from growing.
2015	Contacted Nestham NGO for support. FPO was registered. Office set up in a rented area. Net profit after tax deduction ₹24,000	Rented area did not have proper protection for the produce collected.
2016	Received funding from NABARD to construct office yard and building which was inaugurated in October. Software developed to digitize the auction process. Vehicle bought for the transportation of the banana bunches from farms to the auction yard.	

Crop details: A banana plant bears fruits only once, however from the same root after the first crop cycle other offshoots arise.

Seasonal (October – March) average number of bananas auctioned:	2000–2500 bunches/auction
Average cost of good grade bunches during peak season:	₹80–100/bunch
Average cost of average grade of bunches:	₹40–60/bunch
Off-season average of bananas auctioned:	800–1000 bunches/auction
Off-season price range:	₹15–200/bunch and can soar up to ₹300/bunch
Shelf life:	3–5 days when kept away from sunlight
Lease cost:	₹20,000/acre/year
Plantation cost:	₹30,000–35,000/acre
Maintenance cost (2nd year onwards):	₹1,10,000–1,17,000
Average Income @ ₹90/bunch for 3 years:	₹2,43,000
Profit for 3 years	₹1,26,000–1,33,000/acre
Yearly profit:	₹42,000–43,000

After the initial crop plantation it takes 11 months for the plant to bear fruits. From the second crop cycle onwards it takes nine months for the plant to bear fruits. The farmers tend to a banana orchard for an average of three years because until then the crop quality remains good.

Average crop period preferred by farmers and yield for different banana varities:		
Variety	Crop period	Yield
Karpura Arati	5 years	900 bunches/acre/year
Chakkarakeli	2 years	1100 bunches/acre/year
Pacha Arati (Grand Naine)	1 year	25–30 ton/acre (1 bunch: 25–30 kg)

Challenges and steps to overcome them: The FPO needs to improve the trust of farmers. Another big challenge is the anti-FPO publicity being carried out by certain communities in the village who do not trust the head. But since digitization brings about transparency in the system, it is expected to improve farmers' trust in the FPO.

Impact and farmer satisfaction: Farmers had no bargaining power before the FPO was set up. The traders fixed a rate for the banana bunches irrespective of the size or quality. Also if the bunches were small, then two bunches were bought for the price of one. On the whole, the average cost per bunch before the FPO was set up was around ₹70–100/bunch. The trader paid the farmers after selling the banana bunches and in case certain bunches were left unsold. The entire loss was put on the shoulders of the farmers thereby increasing their risk.

After the FPO was set up, due to the grading system used for auctioning, the average income of the farmers per bunch increased. During the peak supply season of October to March, the average cost of a good grade bunch i.e. grade I or II ranges from ₹100–120/bunch while that of a lower graded bunch ranges from ₹50–70/ bunch. During off-season, the prices can go as high as ₹300/bunch. On the whole, the FPO was able to improve the profitability of farmer by approximately 20%.

Also, in case the trader does not pay for the damaged bunches that are left unsold, the risk falls on the FPO and not on the farmer. Therefore the FPO acts as a platform that reduces the farmers' risk of incurring a loss.

Through the FPO the farmer has a better bargaining capacity. In case the auction price does not reach the expectations of the head who conducts the auction, he can decide not to sell the particular set of bananas and sell it by other means, such as directly in the farmer market.

Impact of digitization: Digitization has quickened auction transactions and improved transparency. Before the auction the head enters the name of the farmer and number of bunches in each grade. During the auction, he enters the name of the trader buying each grade set of the farmer. After the auction, farmer and trader receipts are automatically generated.

The traders pay the FPO in cash once they sell their banana bunches. The farmer payment is directly credited into his bank account. Otherwise, the FPO can directly pay the farmer by cash through a bank portal.

Trader profile and benefits

Most of the traders that participate in the auction are retail store owners. Depending on the number of shops and the size of their shops, they buy bunches to meet their demand until the next auction. The range of bunches bought by the trader varies from 15–20 by a small trader to as many as 150 bunches for a trader with multiple outlets. Most of the banana bunches bought by the traders are sold within the next four to five days (Fig. 9.7).

Types of traders

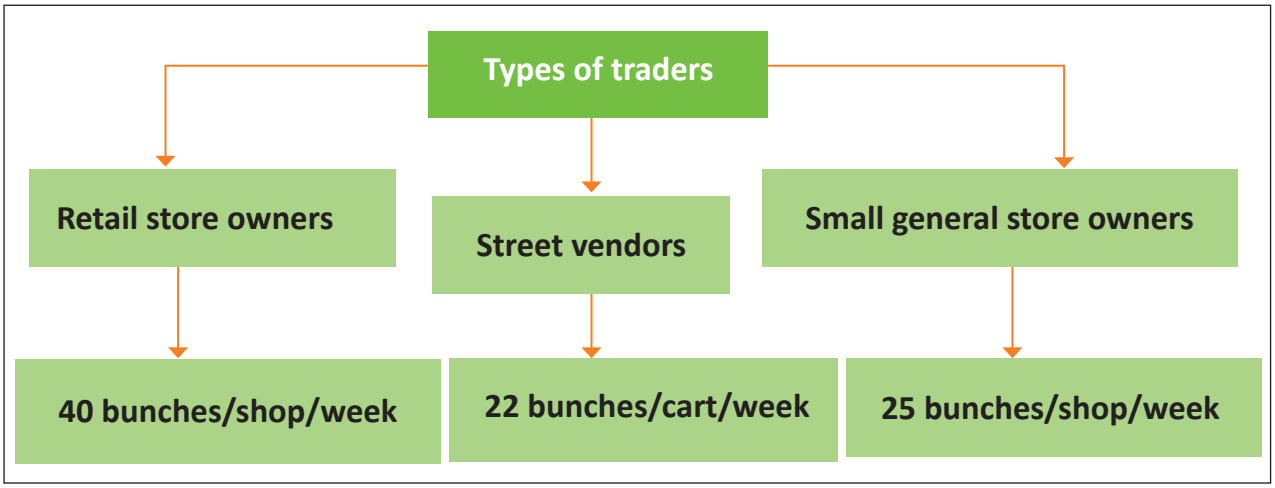


Figure 9.7. Types of traders in the auction.

Approximate annual financial data of FPO

- Total yearly turnover: ₹5,00,000–6,00,000
- FPO maintenance (vehicle, electricity, laptop, etc.): ₹2,00,000–2,50,000
- Loss due to unsold banana bunches: ₹2,00,000–2,50,000
- Profit made in 2015: ₹24,000 after tax deduction and bank loan interest payment.

FPO's goal and clarity regarding the future – Target impact

Popular vegetables grown in the region are ladies finger, eggplant, chili peppers, cabbage, cauliflower, bottle gourd, ridge gourd and little gourd. The FPO aims to set up a collection center and directly supply the collected vegetables to local Rythu Bazars and markets instead of linking with a commission trader.

The FPO also aims to restart its retail section by setting up an outlet in the nearby town of Vuyyuru and in the city of Vijayawada. The head of the FPO, Mr Chandra Mohan Reddy, a farmer himself with two acres of banana orchard, has a clear idea how to proceed with the ideas. The FPO has also managed to obtain funding from NABARD for establishing a ripening chamber. The farmers will then not have to artificially ripen the bananas using harmful chemicals. This is expected to attract more farmers and traders to the FPO.

Key learnings and analysis on the FPO: This FPO is functioning well as a safety net for farmers by minimizing their market risk. With the introduction of digital auction, it has brought about transparency in the entire trade, increasing the trust of farmers. Though the FPO has not increased the profit of the farmers drastically, it sure has the potential to create that impact with time under the right guidance.

10. Mangaladhri Agri Producer Company Ltd.

Visit date:	16/11/2016
Commodity:	Turmeric
CEO:	Mr Gowtham Reddy
MD:	Mr Bheemi Reddy
Board of Directors:	Mr Bh Sambi Reddy, Mr Kesamneni Srinivas Rao, Mr P Bhashikacharyulu, Mr Aarumalla Seshi Reddy, Mr Dontireddy Sambireddy, one Lady BOD added recently
Number of members:	500 from 26 villages (420 paid the membership fee whereas 80 are yet to pay)
Area under FPO:	1000 acres
Average land parcel:	~ 2 acres
Location:	Ravendrapadu, Nuttakki, between Mangalagiri and Tenali, Vijayawada. (Fig. 10.1)

Figure 10.1. Location of Mangalagiri Agri Producer Company Ltd. FPO.

Objective: To improve farmers' profitability through improved quality of produce and direct marketing of the produce in the market.

Roles and responsibilities

Chief Executive Officer: The responsibility of the CEO is to overlook the functions of the FPO. Once the Board of Directors passes a resolution in the board meeting and decides on a path for the FPO to follow, it is the job of the CEO to make sure that the necessary steps are taken to make sure that the objective is achieved.

Managing Director: Under the supervision of the CEO it is the responsibility of the Managing Director to plan steps to achieve the objective and implement them on the ground.

Directors: Each member of the Board of Directors is a representative of his/her area. The Board of Directors is responsible to understand the needs of their respective groups and put them forward in the board meetings, discuss solutions and pass resolutions for furthering the goal of the FPO so as to solve the member problems and improve their profitability.

Members: Members must stay in active contact with the FPO, follow its functioning, take part in all its activities and maintain good relations with the director.

Organization structure: The Company is managed by a Managing Director who is overseen by a CEO. The decisions of the company are governed by six Board Members.

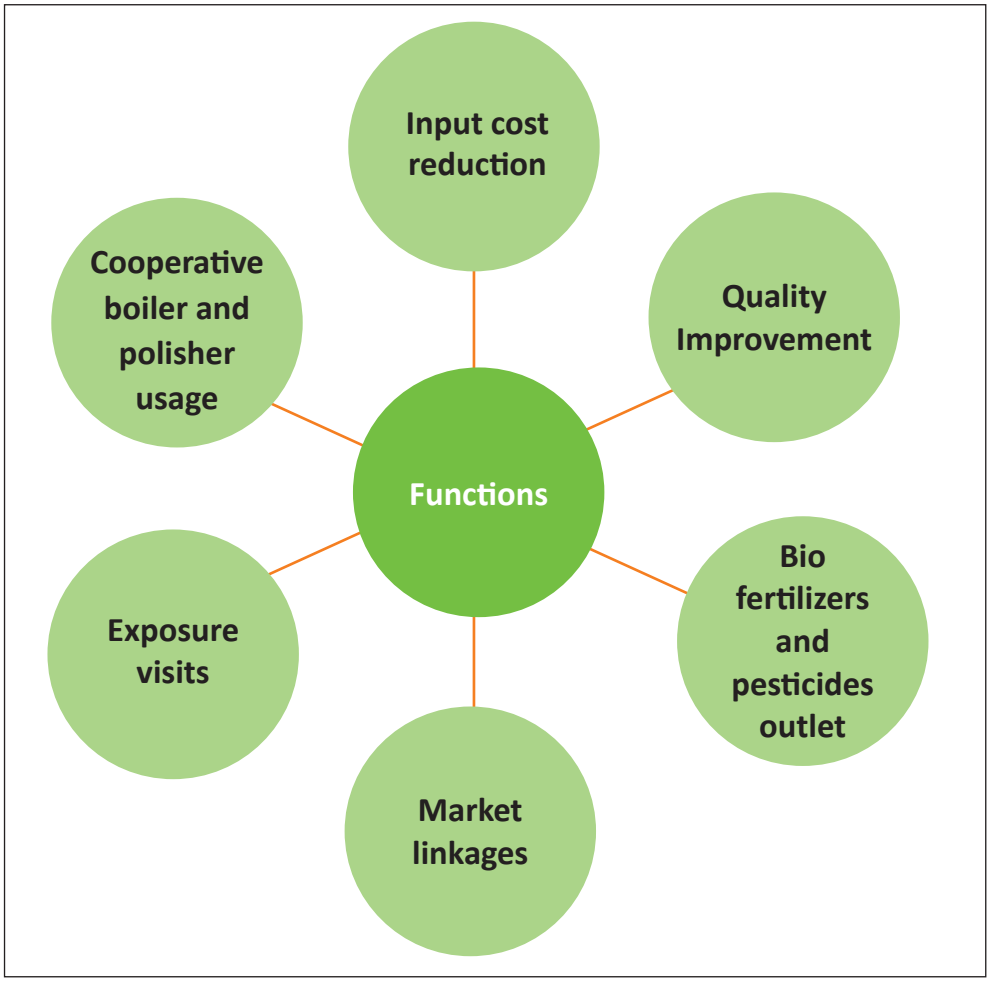


Figure 10.2. Basic functioning: The FPO broadly carries out six basic functions.

Functions of the FPO

Input cost reduction and quality improvement: In the export market, the quality of turmeric is measured in terms of the curcumin present in the final produce. With this as the main objective, the FPO started off its quality improvement program to increase the curcumin content (Fig. 10.2). The minimum quantity needed for export is 3% of curcumin while the produce of the FPO farmers was close to 1.9%. Therefore the FPO tested three seed varieties out of which two varieties yielded good quality produce which were then distributed to 70,000 farmers in the surrounding areas. Currently, the FPO is testing nine varieties of seeds, some old and some new, in a one-acre experimental farm. With information from the Internet and help from the Spice Board and scientists the nine varieties were selected (Figs. 10.3 and 10.4).

- **Better practices:** Turmeric is planted in units of *putlu*, one *putlu* equals 225 kg of seed. Usually the farmers set up six *putlu*/acre but the FPO advised its members to reduce the density of the crop and plant close to 2.5 *putlu*/acre thereby reducing the overall seed cost.

  The FPO also advised its farmer members to break large turmeric rhizomes into smaller parts, dividing each rhizome into two or three parts and planting these smaller seeds individually. This will eventually result in the same yield but reduce the seed cost.

- **Drip irrigation:** The FPO promotes drip irrigation. Drip irrigation is fully subsidized by the government and increases the yield by 2–3 quintal/acre. In drip irrigation, the fertilizer can slowly be distributed in parts instead of a one-time application. This reduces the labor cost of ₹450/day for the farmer. In the main village where the FPO functions, close to 70% of the farmers use drip irrigation.

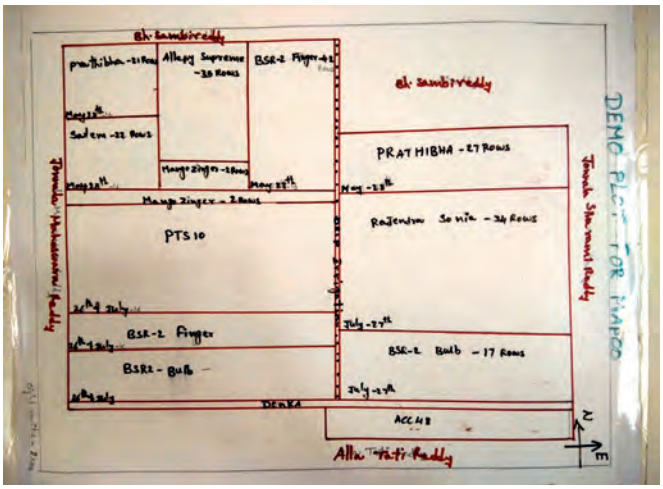


Figure 10.3. Demonstration plot outline of varieties being tested.

Figure 10.4. Demonstration plot crop.

- **Connection with scientists and workshops**: The FPO takes the help of scientists from various organizations to improve the quality of the produce through improved seed variety and better crop management practices. The FPO connects farmers to various scientists for quick advice and suggestions on improving yield and solutions for pests and diseases (Fig. 10.5). They also conduct monthly training workshops on crop management techniques.

  These workshops focus on various stages of the crop and steps to be taken to ensure the best growth at every stage; types of pests that can attack and the precautionary measures that can be taken; fertilizers to be used at every stage; and the types of seeds that can be chosen for the next crop season. These workshops are supported by Krishi Vigyan Kendra (KVK) in Tadepalligudem and Acharya NG Ranga Agricultural University (ANGRAU).

The FPO also runs an Agri Kiosk which is a virtual Agri Service Portal. Each member farmer has a profile with all his crop details in the portal. Whenever necessary, through the portal, the farmer can seek consultation from scientists for his crop. The FPO also released a pamphlet regarding the various pests and viruses that attack turmeric crop, ways to identify them and precautionary measures that can be taken.

- **Bio-fertilizers and pesticides:** The FPO also retails bio-fertilizers and pesticides. One of their main focus is *Panchagavyam,* A bio-product made out of cow dung, urine, milk, curd and ghee (clarified butter). They also sell kits of various bio-products.

The FPO also conducts training on how to make bio-fertilizers [Rhizobium, *Vesicular-Arbuscular Mycorrhiza* (VAM), Phosphate Solubilizing Bacteria *(*PSB) etc.] and bio-pesticides (Trichoderma pseudomonas, etc.) with the help of Mr Ashok Kumar who is an active organic farmer. The workshop was conducted for two farmers each from 13 villages who were also given training to spread the information in their own villages.

This year bio-fertilizers were used on 100 acres of land. The FPO is expecting the farmers to use bio-fertilizers for the cultivation of rice as well in the coming season.

- **Boiler and polisher:** The FPO owns a boiler and a polisher that is rented out to farmers (Fig. 10.6 a and b). The farmers make use of the machinery under the supervision of an FPO manager. The boiler and polisher can be attached to a tractor and moved around. The farmers book their slots through phone calls to the FPO.

The boiler and polisher save the farmer close to ₹500 for one truckload i.e. (2.5 tons). It takes approximately one hour and in summer when the external temperature is high, its takes around 40 minutes for boiling. As the average land parcel is two acres, each farmer has four to five truckloads of produce approximately which saves ₹2,000–3,000 per farmer.

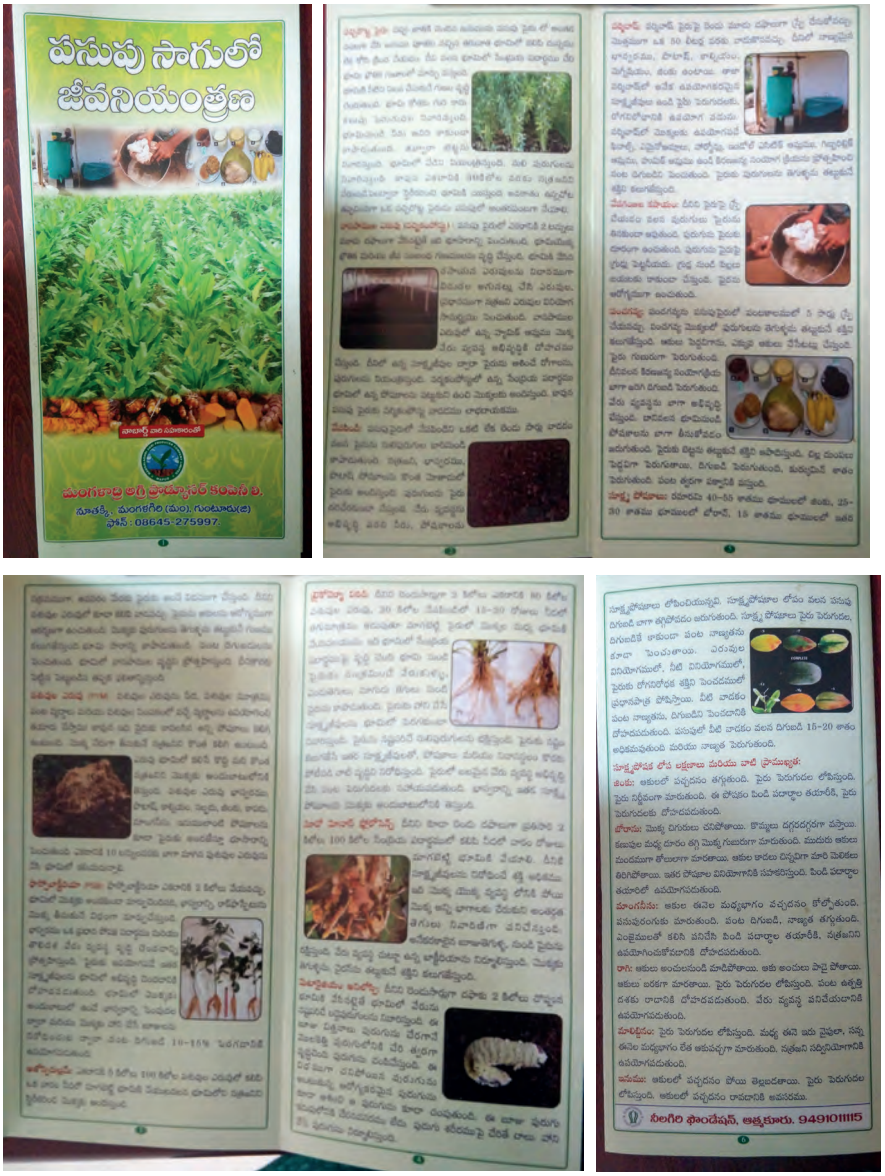


Figure 10.5. The pamphlet the FPO released regarding the various pests that damage turmeric crop.

Figure 10.6. The boiler parts: (a)The steamer and (b) the turmeric container.

FPO processing: ₹50/quintal

Labor charges: ₹30–40

FPO profit: ₹10–20

Manual processing takes ₹70/quintal therefore the FPO saves ₹20/quintal which is equal to ₹500 for 25 quintals (2.5 tons). Last year, the FPO started using the boiler and polisher in late April which is nearly the end of the harvest period. The harvest period of turmeric starts in the third week of March and goes on for 40 days till April end by which most of the boiling is done. This year, the FPO plans to start the usage early and lease out the boiler and polisher to the farmers instead of making them use it under FPO supervision.

The machinery, especially the polishing unit is cost- and time-effective as the manual processing of polishing is long, laborious, and tiresome. In addition, because of the fine processing by the machine, the quality of the produce increased which has led to an approximate increase of ₹200 in the cost of the produce. The boiler and polisher costs ₹100 less for the members than non-members. This step has motivated a lot of farmers to register themselves as members in the FPO.

- **Exposure visits:** The members of the FPO have been sent on two exposure visits, one to Erode and the other to Nizamabad. The Erode visit was funded by NABARD whereas the one to Nizamabad was funded by the horticulture department of Andhra Pradesh. Farmers from Tamil Nadu came and interacted with the members of the FPO. Now the FPO is looking for funding for chain automation of polishing and powdering turmeric without boiling i.e. uncooked powder that is used for everything else except cooking. An exposure visit is also being planned to Bihar to procure good quality seeds that they would like to test.
- **Market connections:** The FPO with the help of the spice board has been trying to form direct market contacts so as to sign procurement contracts with companies. The FPO then collects a commission not from the farmer but from the trader at a cost of ₹0.75–1/kg.

Export contract: The FPO has managed to obtain an export contract for 100 tons of turmeric from a Singapore company with which FPO member farmers have been associated. According to the contract, the company will appoint a staff member to monitor the crop maintenance of these 27 farmers and at the end of the harvest season, the company will buy the 100 tons of turmeric according to the price bargained for with the FPO.

Extractions units: The FPO is also in touch with curcumin extraction units for buying their produce. Curcumin is extracted for usage in cosmetics and medicines. These extraction units procure produce based on the curcumin recovery percentage. They require a recovery of >40%. The produce of the FPO farmers has a recovery percentage of 45%. A good recovery in the final produce would mean a profit of ₹100–120/kg compared to the actual market. Though no official contract has been signed with these extraction units, if the recovery percentage is maintained in the final produce, these units are interested in procurement.

History: Initially, the FPO started off as a vermicomposting and turmeric microfinancing unit supported by the Neelgiri Foundation. Then the farmers registered the FPO on 9 July 2015. The FPO initially started off with 10 farmers, with one or two active organic producers per village. Then these 10 members pulled in proactive farmers. Thereby the FPO kept expanding. Currently, the FPO has six board members comprising of five men and one woman.

The FPO set to work with the export market as their main objective. Since the export market measures the quality of turmeric by curcumin content, the FPO initially took steps to improve the turmeric quality. They arranged exposure visits to Salem, Chennai, and brought back three varieties of seeds which resulted in good quality turmeric which can be exported.

Then they tested the three varieties in sample plots in which two seeds yielded good quality produce. In 2016, these seeds were sold to nearly 70,000 farmers covering nearly 100 acres of farmland. Then with

the help of the Spices Board for marketing they could connect with various traders and obtain an export contract for 100 tons of turmeric from a Singapore Company with which 27 FPO member farmers have been associated with.

According to the contract, the company will appoint a monitoring staff to monitor the crop maintenance of these 27 farmers and at the end of February i.e. at the harvest season, the company will recruit the mentioned quantity of 100 tons of turmeric according to the price range in February. The pricing is on a bargaining basis between the FPO and the Singapore Company.

Timeline

Year	Month	Event	Challenge
2015	Sept	Registration and inauguration of office	
	Sept	Experiment of 3 seeds from Erode	
2016	Feb	Exposure visit to Erode	Funding. (Eventually funded by NABARD)
	Mar	First failure to send the FPO produce to Erode for a better price in trade	Lack of proper logistical planning delayed the date which led to a reduction of price in the Erode auction and instead of profit, the FPO had to bear a loss of close to ₹10,000
	Mar	Exposure visit to Nizamabad auction center	Funding was difficult to get but eventually was funded by the horticulture department of Andhra Pradesh
2016	Sept	Sold 2 seeds from Erode with positive results to 70,000 farmers	
	Oct	Signed a contract of export with a Singapore company	

Crop details

Time period:	June–March (9 months) (rain is necessary during sowing)
Turmeric is planted in units of *putlu* with 1 *putlu* equaling 225 kg of seed. Usually the farmers set up 6 *putlu*/ acre but the FPO advices its members to reduce the density of the crop and plant close to 2.5 to 2.5 *putlu*/ acre	
Seed cost:	₹5000/*putlu* = ₹20/kg
Sowing cost under FPO:	₹15,000/acre
Sowing cost outside FPO:	₹30,000/acre
Lease rate:	₹40,000–50,000/acre/year
Average yield:	30 quintal/acre = 3 tons/acre
Fertilizer + pesticide cost:	₹20,000–25,000/acre
Labor cost (harvesting, plowing, and processing, etc.):	₹20,000
Total 9 months input cost:	₹1,20,000/acre
Average selling price:	₹7,000/quintal
Average Income:	30 * 3000 = ₹2,10,000/acre
Price for peak benefit of farmer:	>₹9, 000/quintal
Rotation crops:	Banana/yam *(kanda)*
Varieties preferred:	Kadapa and Salem
Kadapa variety gives high yield. Salem gives lesser yield but of better quality because of which its price is higher. In each variety there is a bulb variety seed and a finger variety seed. The bulb variety gives a bulb shaped turmeric produce whereas the finger variety gives thin and long-fingered produce.	
Once the crop cycle is done the leaves automatically dry out. Then the farmers remove the leaves, water the field and then dig out the turmeric root.	

Market yards and pricing

Erode: It is one of the biggest turmeric auction markets in the country. This is a market in which the trade is entirely concealed as it is entirely digitized. A sample of each produce is put in a tray with a number and put on display in the market yard. The traders with tablets walk around the market yard inspecting the various samples display and bid a price they think is valid on for the samples they like. Each trader is unaware of the amount the other traders bid. There are close to 250 traders at each auction and close to 10 to 15 lakh quintals of produce i.e. 1 to 1.5 lakh tons of produce is auctioned in every auction during the harvest season. Because of these large numbers the traders do not form unions and bid individually without any preconceived plans, as a the farmers end up getting the best price for their produce. In the end, results depending on the final price for which the produce is auctioned the farmer can decide whether he wants to go ahead with the trade i.e. if he is satisfied with the price, or to store the produce at the trader's shop and trade it in an auction some other day for a better price.

The biggest turmeric markets in India are Erode (Tamil Nadu) and Sangli (Maharashtra).

Nizamabad and Duggirala: In comparison to Erode, the Nizamabad (Telangana) and Duggirala (Andhra Pradesh) markets are quite small. Duggirala is the market closest to the FPO and the market where most of the FPO members auction their produce. In the Nizamabad market per auction there are approximately 150 per auction traders and approximately 9 lakh quintals i.e. 90,000 tons of produce is auctioned. Whereas in the Duggirala market per auction there are about three to four traders and close to 35,000–45,000 tons of produce is auctioned.

Since the number of traders and the amount of produce auctioned is very less in comparison with the bigger markets, here the traders form internal pacts to exploit the farmers. They cap the amount they would bid prior to the auction and do not bid above that amount even though the produce would call for a better price.

In the Duggirala market, the pricing is done depending on the quality of the produce. Quality in the market is not measured in terms of the curcumin content but rather in terms of size, thickness, color, etc. The produce from farmers are usually divided into high, average and low quality based on which the rates are set.

Currently the rates are approximately ₹7150/quintal for high, ₹7100/quintal for average and ₹6800/quintal for low quality. The average selling price is around ₹7500/quintal. During the harvest season The farmer benefits the most when the price is above ₹9000/quintal.

Registration process and operations: The share capital is ₹1000. Bonds are given to members. A non-refundable application fee of ₹300 is collected. Active members are elected to the panel of Board of Directors. On the registration form of new members at least three or five directors need to sign. A maximum of 45 farmers can be registered on one form (Fig 10.7).

Accounts are checked regularly by NABARD. It also meticulously monitors monthly status reports and bi-monthly reviews. Once every three months the Board of Directors meet to discuss further plans and policies of the FPO. Minutes of these meetings have to be maintained for review. Training on how to maintain a logbook under the Companies Act was given.

FPO financial details

- Loan from Chaitanya Godavari Cooperative Bank: ₹36,00,000
- Boiling unit + polishing unit Cost: ₹24,00,000

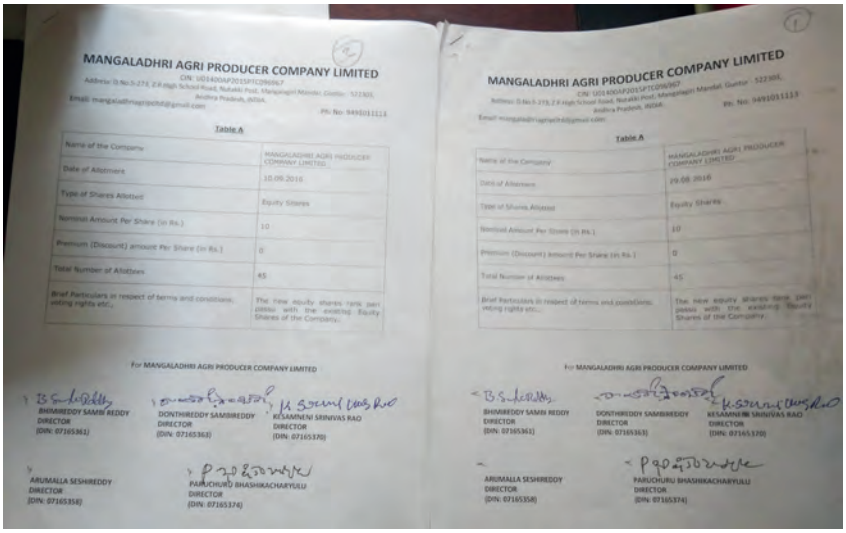


Figure 10.7. Registration form.

Board members and active members put up ₹1 crore worth property as security collateral for a bank loan. A total of ₹4,00,000 of the loan amount with interest has been paid back. The FPO intends to pay back a larger amount this year.

- **FPO Income:** Approximately ₹1,00,000 from boiler and polisher

Support received from Neelgiri NGO:

- Farmer engagement
- CEO's and directors' training and registration help
- Support in receiving the necessary FPO funding from NABARD
  - ₹1,20,000 for the first year for salaries, etc.
  - ₹1,00,000 for the second year
  - Establishment cost of ₹8,00,000 was given for three years.
  - Third year targeted on self-sustainability.
- This is the second year of the FPO and it has achieved partial self-sustainability. It is able to break even with four workers and pay rent along with interest through current income.

Need of the FPO: The FPO finds a need for exposure visits and capacity building workshops for its executive body especially the board members who play an active role in deciding the policies and the entire direction of the FPO functioning. The FPO also finds a lack of availability of information. For example, they read about a new variety of turmeric seed in the newspapers (Fig. 10.8) which results in produce with high curcumin content but they had no way to find out more information regarding this seed as the scientists in the nearest Krishi Vigyan Kendra or any other government body seemed unaware of it. Also water management is crucial for a turmeric crop. Previously, the Prakasam barrage water supply was well-timed but lately it has not been so. This affects the yield as well as the entire crop system. The FPO also finds a need for capacity building in maintaining logbooks and all the other records that are necessary to be maintained according to the Companies Act.

Steps to enhance impact of FPO

- E-Market connections
- Improving online presence through website/blog/Facebook, etc.
- Reattempt to sell produce at the Erode market with better logistics planning.

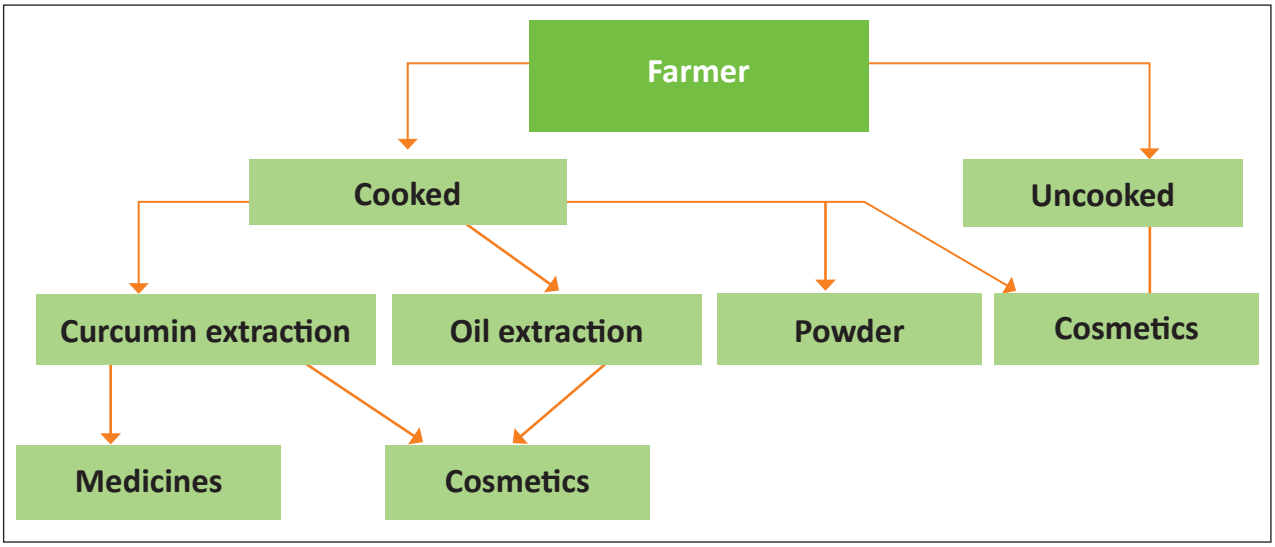
Impact and farmer satisfaction: The FPO has had an appreciable impact on the farmers as well as the entire agriculture environment in the associated villages. Through better crop management techniques it was able to considerably reduce the input cost. It also improves the income by enhancing the quality of the produce by introducing better seed variety and by making better processing techniques available. The overall profit of the farmers was enhanced by approximately 15%.

Goal and clarity regarding future – Target Impact: The FPO plans to set up a powdering unit of turmeric so that they can directly market the powder which will get them a better price. They would also start their own auctioning process by contacting traders and inviting them to buy the produce at the FPO auction. The FPO is also looking into the possibility of developing a chain processing unit for turmeric from boiling to powdering. Right now there is a chain set up in Kerala to produce uncooked turmeric powder i.e. without the process of boiling. This process will reduce labor cost and save the farmer close to ₹25,000/acre.

Figure 10.8. A newspaper article on the FPO.

Key learning and analysis of the FPO: This FPO has the potential to make a difference in the incomes of farmers. It has experimented with new techniques of production as well as marketing. It has not only tasted success but also failures leading to valuable learning. This FPO can drastically enhance the market share of the farmers with proper guidance.

Turmeric supply chain



11. Sri Siddeshwara FPO

Registered as an FPO on 13 October 2015, but operations as a cooperative started in 2012.

Visit date:	20/1/2017
Commodity:	Mango
President	Mr G Rajendra
Secretary:	Mr Chitti Babu Naidu
Board of Directors:	10 (1 per village)
Number of members:	350 registered, 150 yet to register
Villages covered	10
Area under FPO:	6000–7000 acres
Average land parcel:	5–20 acres
Location:	Geddamvarapally, YV Palem *mandal*, Chittoor district (Fig. 11.1)

Figure 11.1. Location of Sri Siddeshwara FPO.

Popular varieties: Totapuri (juice variety), Benishan (preferred for export), Kadaru, Neelam, Sindhura

Total area in *mandal* under mango cultivation: 18,000 acres

Objective: To provide farmers with a safer alternative for micro-funding by setting up a cooperative society and to ensure that the farmers get maximum profit by directly marketing the produce to consumers and avoiding middlemen.

Organization structure: Each village has a Board of Directors that is responsible for the village. The Board of Directors is overseen by the Secretary who reports to the Managing Director. The Managing Director oversees the company and is guided by the President who resides over the decision-making of the company along with the Board of Directors.

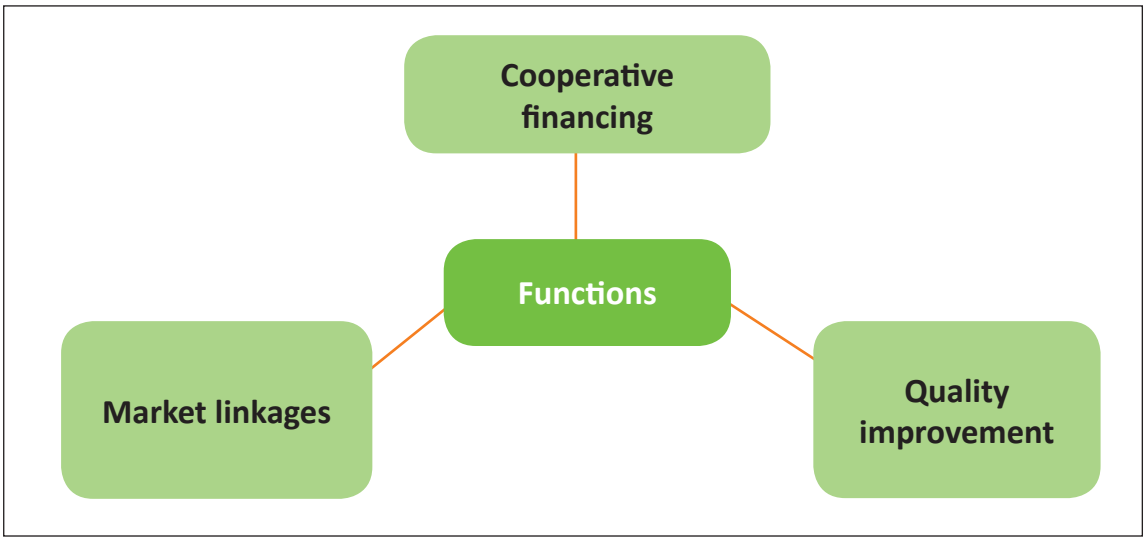


Figure 11.2. The FPO functions.

Functions of the FPO

The FPO mainly carries out three functions (Fig. 11.2):

- **Cooperative financing:** This FPO initially started off as a cooperative saving and financing group and still continues this activity. Currently an amount of ₹7,00,000 is available for financing farmers.
- **Quality improvement:** Mango is a perennial tree with a lifespan of up to 100 years. It takes 5–6 years to bear fruit after planting. While the trees were yet to come to fruition, the FPO took up intercropping of crops such as papaya, tomato, etc. The FPO maintains close relations with scientists from the local Krishi Vigyan Kendra and the Tirupati Agriculture University. The FPO often arranges for scientists to visit and interact with its farmers.
- **Market linkages:** The FPO has constructed 24 pack houses where the mangoes of its members are stored before being sent to the market.
    - **Local markets:** Mangoes (raw and ripe) are sent to local markets for sale. The biggest markets are in Mumbai and Pune. Mangoes are also sent to Chennai, Bengaluru, Tirupati and Hyderabad but the percentage of produce sent is low.
    - **Exports:** In Tirupati, Sreenidhi Organization runs a ripening chamber where mangoes from registered members are purchased, graded, cleaned and exported. The FPO is one of the registered members of this ripening chamber. The FPO mostly exports mangoes to the Middle East through various exporters. The mangoes are graded depending on their size, color, presence of spots, damage, etc. The entire export trade process happens online and the buyers procure mangoes directly according to the grade and weight.

History: Crop loans given by a bank are interest free if the loan amount is returned within one year. If the payment takes more than one year then interest is charged as per the norms, which is high for a normal farmer. Therefore to facilitate cooperative funding to all the farmers in the area, a cooperative society was set up in 2010.

At that time the farmers used to send their mango produce to a market 50 km away near Chittoor, where the commission and exploitation was high, because of which the farmers got less than 50% of the actual cost of the mangoes. With the idea of directly marketing the mangoes, the society approached a company to purchase Totapuri (juice variety) mangoes in 2011. For two years, the society marketed the produce of its member farmers to various companies. After two years, the society was approached directly by exporters for produce to be exported . So the society expanded its functioning. In 2015, the society completed registering as an FPO.

After that the president and the secretary experimented on a new technique called Ultra Hyde Planting, based on the Unnati Program run by a Jain company near Coimbatore. This technique calls for planting trees close to each other, i.e. 620 trees/acre. However, this technique led to little success in the FPO area.

The Benishan variety is preferred for its taste, Kaderu for its aroma and flavor because of which it is used in perfumes and flavoring, and Totapuri has a long shelf life because of which it is preferred in juices and pulps.

On 19 January 2017, the president sold 1 ton of raw mangos of a Bengaluru breed (called *collector-kaya* in the local language) at the local market individually (out of the FPO):

- **Selling cost:** ₹15,000
- **Commission:** 10%
- **Damage cost:** 2%
- **Cost outside the market yard:** ~₹20,000/ton

FPO finances: This FPO could overcome credit flaws and find their own finances. As they were initially

Crop details	
Number of trees/acre:	60 trees/acre with a gap of ~ 7m x 7m
Cost of sapling:	₹120–150
Labor cost for plantation:	₹10,000–15,000/acre
The input cost is high in the first year. For the first 3 years the crop requires large quantities of water.	
The crop flowers after 3 years but it takes 5 years for the yield to stabilize.	
Yield after 5 years:	5 tons/acre
Lifespan:	Perennial crop with up to 100 years lifespan
Popular varieties:	Benishan (export) and Totapuri (juice)
Benishan (export variety)	**Totapuri (juice variety)**
Export price: ₹30,000–35,000/ton	₹10,000–16,000/ton
Quantity marketed in 2016: ~ 500 tons	~ 3000 tons
Total produce:	10,000 tons
Intercrops during initial years:	Papaya and tomato
Previous market price when sold to middlemen (before 2014):	₹2000/ton
1 ton = 2000–3000 fruits	

set up as a cooperative society, they had savings from their members that they used initially to establish market connections. They received some help from the Gramina Bank and the Horticulture Department of Andhra Pradesh and an NGO Rural Organization for Social Service (ROSS) based in Tirupati. Apart from that they are self-funded.

- **Turnover of FPO in 2016:** ₹4,00,000

With all the turnover, the FPO has to date constructed 24 pack houses with subsidy from the Horticulture Department of Andhra Pradesh to store the members' crop.

Impact: The FPO was set up to overcome exploitation by middlemen. Farmers were paid half the market price for their mangoes back in 2013. Once the FPO started marketing its own produce in 2014, the income of the farmers increased by 20%.

Future plans: The FPO plans to set up an office and a ripening chamber. They are in the process of acquiring the land for it. It also plans to acquire an exporter license so that they can directly export their mangoes. This will greatly enhance the incomes of farmers.

12. Kisan Suvidha FPO

Visit date:	20/1/2017
Commodity:	Mango
CEO / MD / President	Mr Sahadeva Reddy
Board of Directors:	7 (1 per 10 members)
Number of members:	70 (More than 350 members to be added in 2017)
Area under FPO:	~100 in 3 *mandals* (Ropacherla, YV Palem, CG Gallu)
Average land parcel:	5 acres
Location:	Bhakarapeta, CG Gallu *mandal*, Chittoor district (Fig. 12.1)

Figure 12.1. Location of the Kisan Suvidha FPO.

Registered as an FPO under the Ministry of Corporate Affairs in May 2016, but the activities started in 2015.

Popular varieties: Totapuri (juice variety) and Banganapalli

Supporter: Mr Shaik Abdul Ali

Membership criteria: Close to 20 rules are to be followed to be a member. These rules include fair treatment of workers or laborers without any discrimination based on caste, creed or gender, to follow the **Rainforest Alliance Certification** guidelines for cultivation, etc.

Supporting organizations: Nava Quality Foods Pvt. Ltd. (www.navaqualityfoods.com) and Monsoon Green Earth Farmers and Projects Pvt. Ltd. (www.mgefarms.com)

Objective: To enhance the profitability of farmers and improve their standard of living by connecting them directly to consumers through local markets as well as exports.

Roles and responsibilities

Managing Director

- Handles the marketing, finance and operations of the entire FPO.
- Closely works with the supporting companies and makes sure that the farmers' produce is up to their guidelines.

Board of Directors: All the seven directors meet once a month and train at a cluster level. An annual general body meeting is held with all the member farmers to set a budget and plan the direction of functioning for the next year. The directors take an active part in the decision-making process of the FPO and impart the knowledge they gain in the cluster level training to all the member farmers under them.

Nava Quality Foods and Monsoon Green Earth Farmers and Projects: They are export and processing companies that work closely with the FPO and purchase all the produce they require only from the member farmers. They procure the farmers' produce at the maximum possible rate so as to ensure highest profit for the farmer as well as making sure they have a profit margin to sustain and grow.

Functions of the FPO: The FPO mainly carries out four functions (Fig 12.2):

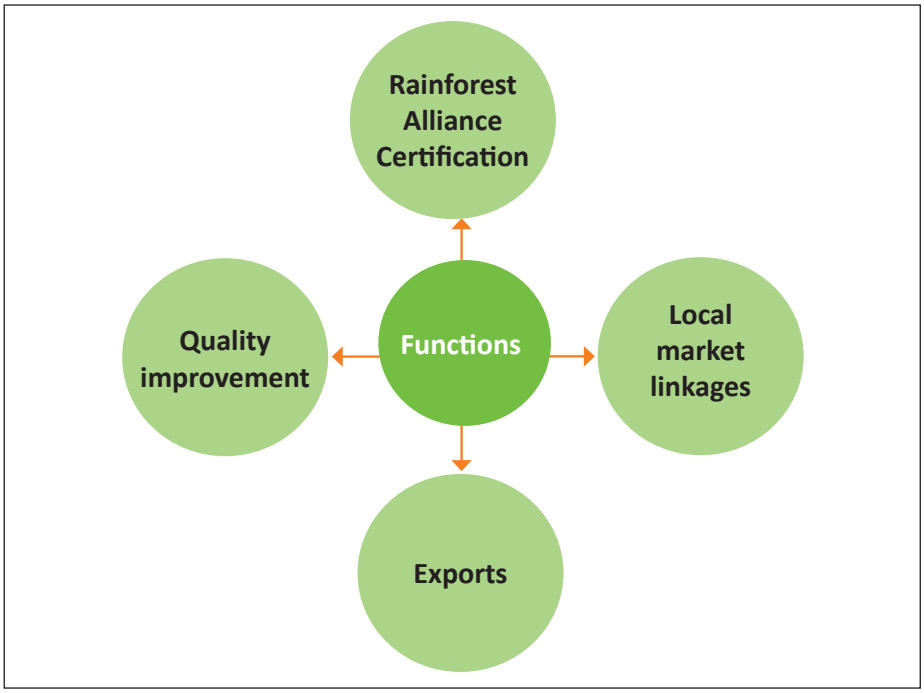


Figure 12.2. Functions of the FPO.

- **Rainforest Alliance Certification:** This is an internationally accepted certification with close to 100 criteria based on practices of integrated pesticide management. This certification qualifies the produce as sustainably organic i.e. crop that is cultivated with minimum chemicals and mostly with the use of non-chemical and natural inputs. This is a certification that is difficult to obtain and Kisan Suvidha is the first FPO in India to have obtained it. The FPO has the capacity to improve its profit by 20% because of this certification. The entire seed funding for all the documentation process was taken care by the supporter Mr Shaik Abdul Ali, an NRI who returned to work with the farmers in his hometown.
- **Market linkages:** Mangoes are sold to the buyers as an entire crop, irrespective of the yield. The buyer comes to the FPO, checks out the farms and quotes a price for the entire produce of the crop. After a thorough bargain, an MOU is signed with the buyer for a certain quality and quantity of produce. The produce is graded by the farmers themselves before selling it. The quality of the produce is decided according to its weight, color, texture of the fruit, etc.
    - **Local market linkages:** The FPO has locally supplied mangoes to various retail outlets and juice companies such as Heritage, Mother Dairy, Global Fresh Farms, Tropicana, etc. Heritage and Mother Diary mostly procure Banginapally variety; Tropicana solely procures Totapuri which is the most-preferred juice variety.

      The FPO is also attached to a pulping unit that is run by Mr Abdul Ali. The pulp from the unit is supplied to companies in the ice cream, beverages and flavoring industries. Other pulping units also procure mangoes from the FPO.

- **Exports:** The FPO is linked to an exporter – Nava Quality Foods. This is a company of the FPO supporter and is entirely focused on exporting mangoes of the FPO members. The FPO also supplies mangoes to other exporters, namely KayBee exports and other local pulping units.

- **Quality improvement:** The FPO has people experienced in farming practices and cultivation techniques as farm managers. These farm managers interact with the Board of Directors and members and provide training on the best and latest cultivation techniques and on cultivation guidelines for Rainforest Allliance Certification.

History: This FPO is the brainchild of Mr Shaik Abdul Ali. After setting up an export company and a pulping unit, he formed an FPO of farmers for the supply of produce for his companies in 2016. To analyze the impact of his idea he started a pilot project with 70 members. Strict guidelines for members were enforced so as to bring about professionalism in the functioning of the organization and obtain the Rainforest Alliance Certification for the FPO members' farmlands. Now more than 350 farmers are interested in becoming members and they are being given the necessary instructions for obtaining the certification.

Crop details: In the five *mandals* (three of which are covered by the FPO) close to 80% of the land is under mango orchards. Close to 99% of the mango orchards use drip irrigation.

Timeline	
Year	**Activity**
2015	Activities started to set up a farmer base with the idea of following guidelines to obtain the Rainforest Alliance Certification.
2016	FPO registered at the MCA, Rainforest Alliance Certification acquired, pack houses construction was started and close to 5000 tons of mango produce was marketed.
Jan 2017	MOU signed for allocation of land to set up a processing unit.
May 2017	Planning to collect a share capital at ₹10/share and 200 shares/acre. If things go per plan, close to ₹50 lakh of share capital is expected to be collected

FPO financial details

- **Turnover in 2016:** ₹5,00,000
- **Total worth of produce marketed:** ₹1,50,00,000
- **Quantity of crop marketed in 2016:** 5000 tons

Popular varieties:		**Banganapalli and Totapuri**	
Trees /acre:		40–50 trees/acre	
Harvest time:		May–June	
Flowering starts 3 years after plantation but yield is very low.			
Yield after initial 5 years of stabilization:		5 tons/acre	
Input cost:		~ ₹10,000/acre (inputs and labor)	
Banganapalli		**Totapuri (juice variety)**	
Export price:	₹35–40/kg	Local pulping unit price:	₹17/kg (10% premium cost given)
Local market price:	₹28–30/kg	Other pulping units price:	₹15/kg

Impact: Year 2016 was a pilot year, so the number of member farmers and activities taken up were done on a minimal scale so as to test the impact of the idea. Previously the farmers hardly got ₹8 000/acre and had minimal profit while the middlemen earned close to ₹60, 000 for produce equaling the yield from 1 acre. But after the FPO was set up, the farmers obtained a 20% premium on their price. Previously farmers' profit was close to ₹30,000/acre, now it is close to ₹60,000/acre.

Future plans

- In 2017, the FPO aims to market produce worth ₹5 crore.
- In January 2017, the FPO is going to sign an MOU in Visakhapatnam for land allocation to set up its own processing unit for pulping, frozen commodities, juices, jellies, etc.
- In May 2017, the FPO plans to collect a share capital from all its member farmers at ₹10/share and ~200 shares/acre. If the farmers pay dutifully, close to ₹50 lakh share capital is expected to be collected.
- Plans to set up an Agri-Clinic (shop to sell fertilizers and chemical-free pesticides) which will reduce the cost of cultivation by nearly 20%.
- The FPO also plans to promote intercropping of various crops in the initial stages of the mango orchard. It also aims to enter into the market with other major fruits like pineapple, grapes, passion fruit, etc.
- By 2020, the FPO aims to cater to 5000 farmers.
- Long-term plans include setting up cooling chambers and cold storage that meets export standards. This plan costs close to ₹7 crore.

13. Cheldiganipalle Farmers Mutually Aided Cooperative Society

In collaboration with Chaitanya Rythu Mithra Group

Visit date:	21/1/2017
Commodity:	Vegetables and flowers
CEO / MD / President	Mr Umapati
Secretary	Mr Chandra Shekhar Reddy
Board of Directors:	4
Number of members:	145
Villages covered:	10 across 4 *mandals* (V.Kota, Ramakuppam, Shantipura, Kuppam)
Area under FPO:	450 acres
Average land parcel:	~ 3–4 acres
Location:	Cheldiganipally, Kuppam, Chittoor District (Fig. 13.1)

Registered in 2006 as Mutually Aided Cooperative Society (MACS) to supply inputs and in 2013 registered as an FPO.

Figure 13.1. Location of Cheldiganipalle Farmers Mutually Aided Cooperative Society FPO.

Membership fee: ₹1133 i.e. ₹1000 share capital + ₹113 entry fee

Entry fee for Rythu Mithra Group: ₹2,500

Objective: To help farmers procure the best price for their produce by directly marketing and connecting with various buyers through delivery contracts.

Organization structure: The entire process of collecting the vegetables is done by the workers and overseen by the Secretary under the guidance of the President. The entire FPO and the managerial decisions are taken by the Board of Directors under the guidance of the President (Fig. 13.2).

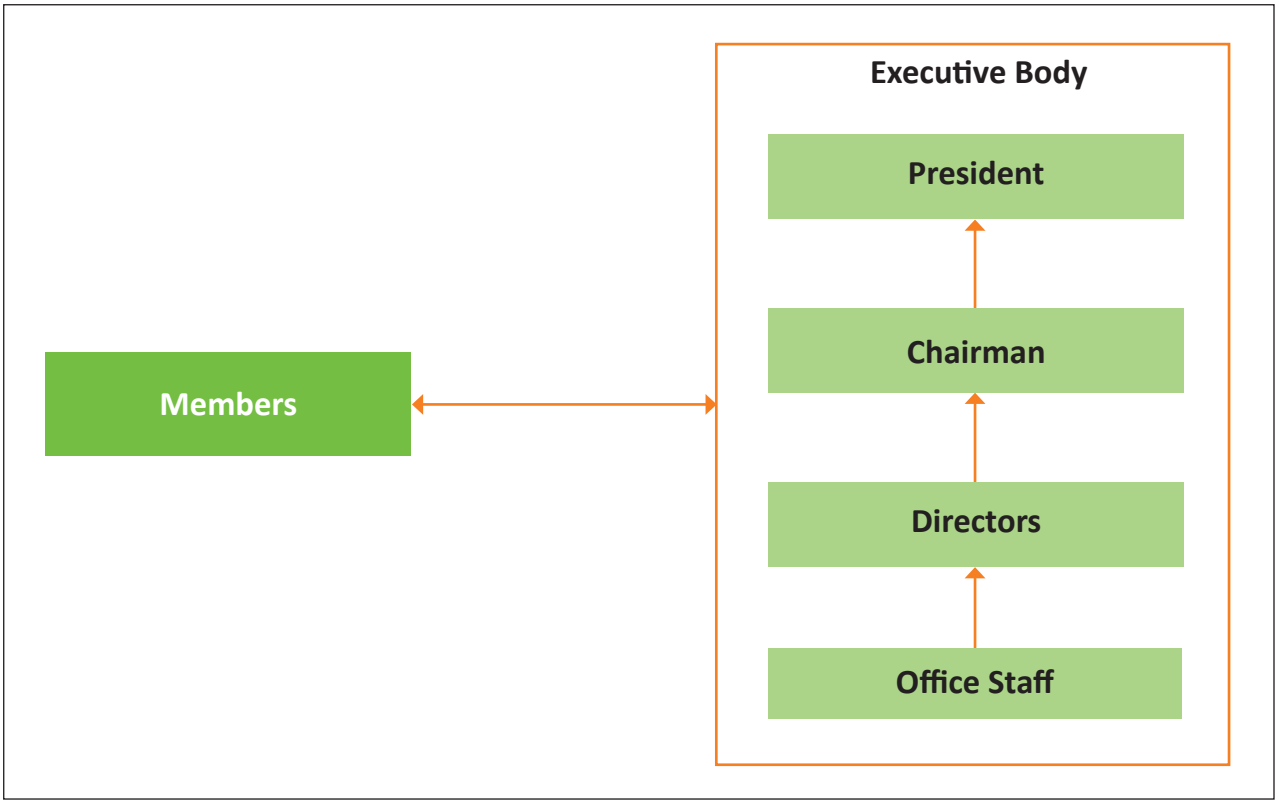


Figure 13.2. Organization structure.

Roles and responsibilities

President

- Maintaining a good relationship with all member farmers and keeping their data updated in the society documents.
- Maintaining good relationship with the customers and expanding the market share by signing contracts with new customers.
- Financial planning and accounting of the entire society.
- Planning to reach the goals set by the directors.

Secretary

- Aiding the President in his duties.
- Guiding and supervising the office staff.

Directors

- Taking decisions for the FPO in the monthly meetings.
- Setting direction and goals for the FPO.
- Finding solutions to the problems being faced by the FPO.

Office staff: Handling the entire process of collection and delivery. Responsibilities vary slightly depending on their role.

Functions of the FPO

The FPO carries out five main functions (Fig. 13.3):

- **Exposure visits:** In the past eight years, the FPO has conducted various exposure visits on new techniques of cultivation, improving knowledge on a particular crop, etc.
    - **Chandigarh, Punjab:** The FPO took farmers to Chandigarh in 2008, to gain more knowledge on potato cultivation i.e. to understand the techniques used, the seeds that are popular, etc.
    - **Coimbatore, Tamil Nadu:** The farmers visited Coimbatore Agricultural University in 2012 and visited Jain Irrigation for improving their knowledge regarding high density mango cultivation.
    - **Mysore, Karnataka:** The farmers went to Mysore in 2013 to improve their knowledge on vegetable cultivation techniques.
    - **Trichur, Tamil Nadu:** The farmers visited the place twice. First to the Banana Research Station to learn more about banana cultivation and second to conduct a survey on the cultivation of the flower Ixora.
    - **Hosur:** The horticulture department of AP has funded multiple exposure visits to Hosur to improve the knowledge of farmers on 'Precision Farming'.
    - **Shimla, Himachal Pradesh:** The farmers visited Shimla in 2016, to learn about potatoes grown for Pepsi co. for chips production.

All these exposure visits were partly funded by the Horticulture Department of the Government of Andhra Pradesh and the FPO also partly used money from their savings.

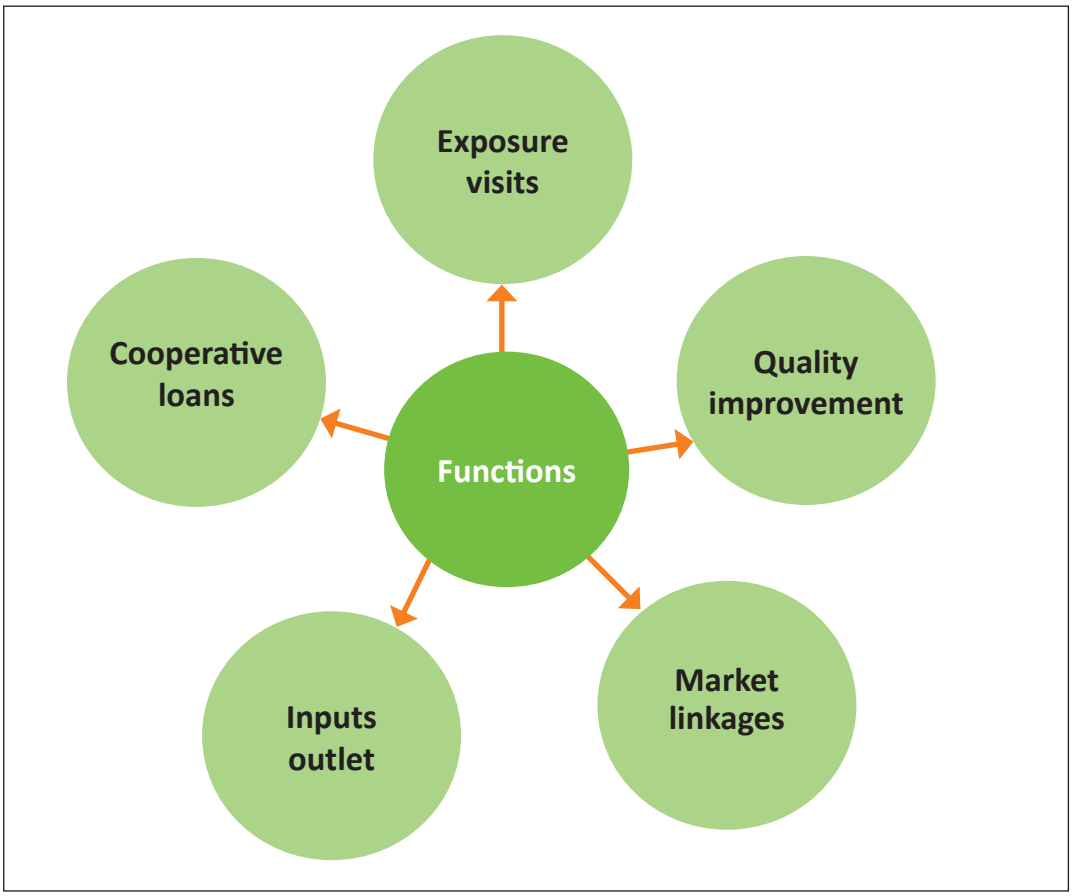


Figure 13.3. Basic functions of the FPO.

This FPO is one of the most popular FPOs in the district where many farmers from around the globe come to visit. Along with various farmers from across India, farmers from Netherlands and South Africa have also visited this FPO (Figs. 13.4 and 13.5).

- **Quality improvement:** The FPO's focus is constantly on quality improvement of the produce it markets and it consults three retired scientists from Bengaluru on various issues that arise. The FPO conducts multiple training programs on various crops and also experiments with new seed varieties procured from various regions in demo plots. It also distributed seeds with best results to farmers in the surrounding areas. The main crops on which various training programs have been initiated are mango, papaya, grapes, roses, potato and vegetables.

  These training programs are on the latest cultivation techniques and quality improvement measures. NABARD has to date funded six such training programs (Fig. 13.6 a,b,c,d).

- **Market linkages:** The FPO supplies eight tons of vegetables to 22 institutions run by the Tirumala Tirupati Devasthanam (TTD) in Tirupati which includes schools, college, hostels, etc., once every two days; and 400 kg of flowers (varieties depending on the season) and marigold of approximately 5 tons/month to the Tirumala Temple every day. Some institutions order a specific set of vegetables

Figure 13.4. Visiting farmers from Netherlands.

Figure 13.5. Visiting farmers from South Africa.

Figure 13.6. Training programs on (a) chips potato cultivation, (b) grapes and banana cultivation by Dr Prakash – Sr Scientist, IIHR Bengaluru, (c) mango cultivation by Mr YTN Reddy, IIHR Bengaluru and (d) papaya cultivation by IIHR Bengaluru scientists.

whereas to some institutions, the FPO sends available vegetables making sure no particular vegetable is excessively repeated. The costing of all the items sent is done according to the Tirupati Rythu Bazar rates which are sent to the FPO everyday through mail by the Rythu Bazar authorities.

This FPO is located just a few hours away from the major cities of Bengaluru and Chennai and also from educational hubs like Vellore. Therefore, as the FPO has already established a successful delivery system for 22 institutions in Tirupati, it has been receiving requests for delivery of vegetables from various other educational institutions from all over the district. But before expanding its market base to other customers, the FPO needs to optimize its current operations and then branch out to more customers.

- **Agri-input retail outlet:** The FPO in collaboration with the Rythu Mithra Group i.e. Cooperative group runs an agri-input retail outlet. This outlet is open to all the farmers in the area irrespective of members or non-members. The rate of items in this outlet is the same to members and non-members (Fig. 13.7).

Figure 13.7. Agri-input retail store run collaboratively by the FPO and the Rythu Mithra Group.

- **Cooperative loans:** The Rythu Mithra Group that the FPO collaborates with gives out loans to farmers. It follows the rules of a cooperative society and gives loans from the savings of the member farmers. Currently close to ₹15 lakh has been loaned to the farmers, who repay it through regular payments.

Vegetable supply process

- The FPO keeps a constant update of the availability of produce among its member farmers.
- The institutions send their requirement to the FPO either by mail, SMS or phone.
- After collecting all the orders, the FPO procures the required amount of vegetables from its members in the two 1-ton capacity trucks and collects then in the FPO yard. In case of nonavailability of the required amount of quality produce, the FPO purchases it from non-member farmers from the local market or from Tirupati Rythu Bazar.
- A weighing scale at the FPO yard to weight farmer produce, after which a receipt is given by the FPO (Fig. 13.8).
- The purchased vegetables are graded by six workers appointed by the FPO and the produce above a set minimum quality is distributed in labelled crates according to the institutions, requirement (Fig. 13.9).
- These are then loaded in the morning into a rented truck to Tirupati.

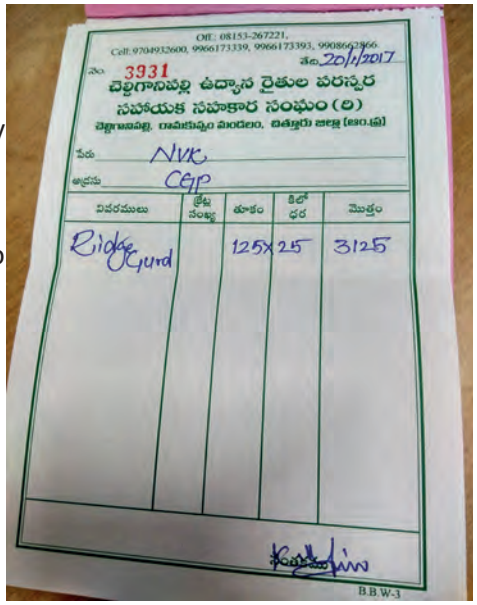


Figure 13.8. The receipt given to a farmer by the FPO.

- The FPO has laborers in Tirupati who unload the crates at the various institutions.
- TTD pays the FPO every month, whereas the FPO pays the farmers either daily or at regular intervals depending on the farmers' preference.

Flowers supply process

- Flowers are sent every day in the evening by a bus to TTD.
- They are picked in the morning. An FPO employee in charge of the flowers division initially checks the quality of the flowers being picked in the farms.
- They are then collected and brought to the FPO yard.
- Marigold flowers, specifically, are then sewn into garlands by local women, while the other flowers are sent loose (Fig. 13.10).

Collection
- The institutions send their requirements
- Procurement according to the requirement
- Produce is then graded and distributed among the various institutions

Supply
- Early in the morning, the produce is loaded into a rented truck and transported to Tirupati
- Laborers employed by the FPO unload the crates at each institute according to the labels on the crates

Payment
- TTD pays the FPO every month
- The FPO pays the farmers either daily or at regular intervals depending on the farmers' preference

Figure 13.9. Vegetables supply flowchart.

Figure 13.10. Women making garlands of marigold in the FPO yard.

- The flowers and garlands are then packed in wet gunny bags to keep them fresh and then loaded into a bus to Tirupati in the evening.
- The FPO workers in Tirupati then load the produce into a bus to Tirumala Devasthanam.

TTD pays the FPO every month. TTD pays for the vegetable and half of the transportation cost as delivery charges. According to the contract, payment is supposed to be done every three days which is not happening. The FPO is now trying to negotiate for a payment at least every 15 days instead of monthly (Fig. 13.11).

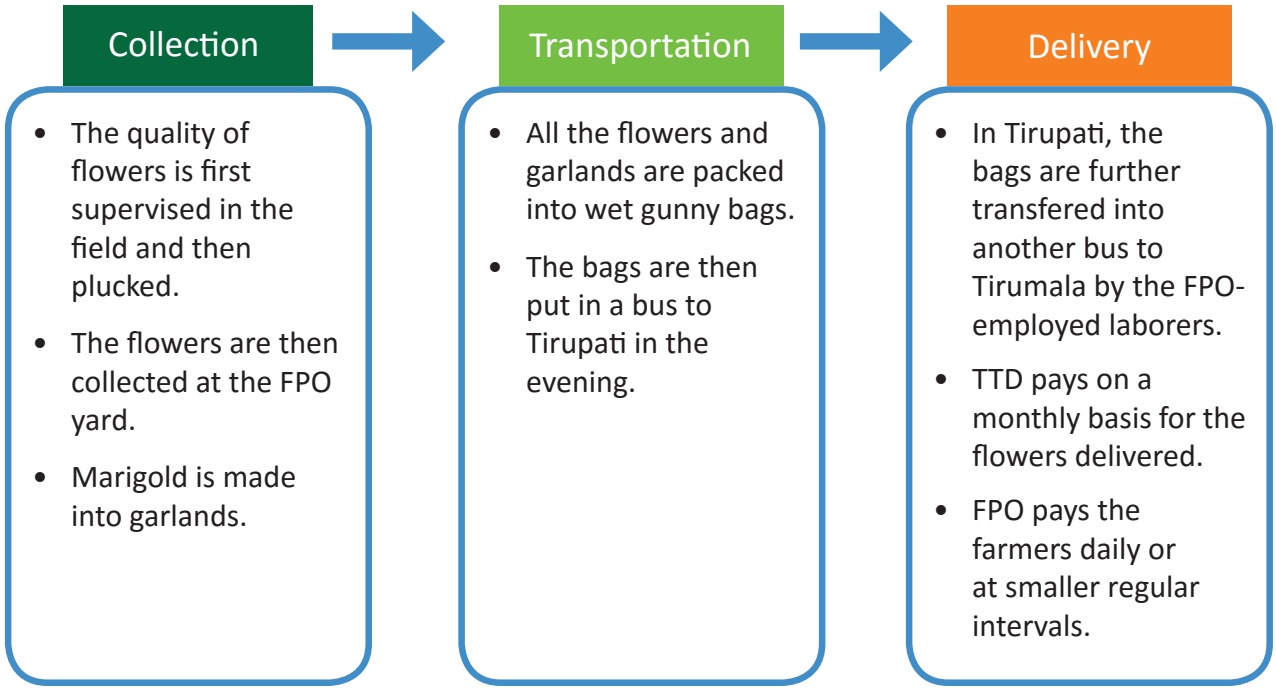


Figure 13.11. Flowers supply flowchart.

The FPO takes a commission of ₹2/kg for vegetables and ₹5/kg for flowers. A part of this commission is used for transportation and the rest for FPO functioning. For flowers the transportation cost is higher the commission collected is also higher.

There might arise a case when the local market rate of vegetables is higher than the Tirupati Rythu Bazar rates. In such a scenario therefore farmers are more interested in selling their produce in the local market rather than sending it to TTD through the FPO. The FPO then recruits the produce from the farmers at the local rate and sells it at a loss to TTD at the Tirupati Rythu Bazar rates. In doing so the FPO acts as a safety net to the farmers towards the dynamic market prices of vegetables and guarantees a minimum price for their produce.

List of the TTD institutions to which the FPO supplies vegetables:

S. No.	Name of the Institution
1	S.V. Vedapathashala, Tirumala
2	S.V. Employee Canteen, Tirumala
3	S.V. Rest House Canteen, Tirumala
4	S.V. Nitya Annadaanam, Tiruchanuru
5	S.G.S. Arts College Hostel, Tirupati
6	Srinivasa Complex. Tirupati
8	S.V. Poor Home, Akkrampalli, Tirupati
9	S.V. Canteen (A. D. Building), Tirupati
10	S.V. Oriental College Hostel, Tirupati
11	S.V. Training Center for the Handicapped, Tirupati
12	S.V. School, Junior College, Diploma Hostel, Tirupati
13	S.V. Ayurvedic College (Men), Tirupati
14	S.V. Ayurvedic College (Women), Tirupati
15	S.V. Junior College Hostel, Tirupati
16	S.V. Arts College Hostel, Tirupati
17	S.V. Vedic University Tirupati
18	S.V. Rest House Canteen, Tirupati
19	S.V. Women's Degree College Hostel, Tirupati
20	S.V. Women's Junior College Hostel, Tirupati
21	S.V. Women's Polytechnic College, Tirupati
22	S.V. Music and Dance College Hostel, Tirupati

History of the FPO: In 1997, the government developed close to 1600 acres of land area under the drip irrigation project in which the area of this FPO falls. Due to the development, a lot of agriculture scientists, officers and farmers visited this area because of which the FPO developed a lot of connections. Slowly they learnt better techniques of cultivation and enhanced their income.

In 2003, with 17 members, the FPO started the Chaitanya Rythu Mithra group on 23 June. By collecting a savings of ₹50 from the members, the group started giving cooperative loans to farmers. In 2006, due to a shortage of inputs for farmers, the group decided to set up an input outlet. The group by then had a saving of ₹1,25,000. Each member put in ₹25,000 and generated a sum of ₹4,25,000. A bank loan of ₹1,00,000 was also taken. With a total sum of ₹6,50,000 the group set up a retail outlet of fertilizers and pesticides on 20 January 2007. In order to expand their services to more farmers on 1 June 2006, the

Timeline	
Year	Activity
2006	Registered as Mutually Aided Cooperative Society
2008	Exposure visit to Chandigarh, Punjab, for potato cultivation
2009	Thrissur for banana cultivation
2011	Exposure visit to Hosur regarding precision farming
2012	Exposure visit to Coimbatore Agriculture University
2013	Exposure visit to Mysore for vegetable cultivation
2014	Office construction completed in ½ acre of land
2014	Started delivery of vegetables to TTD
2014	Thrissur for cultivation of Ixora
2015	Started delivery of flowers to TTD
2015	Exposure visit to Hosur regarding precision farming.
2016	Exposure visit to Shimla regarding potato cultivation for Pepsi co. chips

group registered the Cheldiganipalle Horticulture Farmers Mutually Aided Cooperative Society to include four *mandals* and a total of 143 members. Along with the other products quality seeds were also included into the retail store list. The society makes an income of close to ₹2,00,000 because of this agri-input retail outlet. The FPO also started conducting exposure visits and various training workshops.

Mr MK Singh who worked as the TTD vigilance office at that time became the Rythu Bazar head. He took special interest in the FPO and pushed them forward to tie up with TTD. Initially, the FPO was disinterested as they were not confident on how this would turn out. But at the insistence of Mr Singh and after multiple meetings held in Hyderabad, Palamner and Tirupati, the FPO agreed to a one-month trial supply of vegetables to all the 22 TTD institutions. Here again, Mr Singh helped the FPO in gaining all the necessary funds to establish the entire delivery system. By the time the month ended, the FPO as well as TTD were satisfied with the work being done and so signed a one-year contract for the supply of vegetables on 1 July 2014.

Since the flower merchants were sending low quality flowers and since TTD was satisfied with the job of the FPO in the supply of vegetables, in 2015 they approached the FPO for the supply of flowers as well. Initially, the FPO started the supply of flowers with marigold. Now it supplies along with marigold, roses, lilies, chrysanthemums, *Withania somnifera Dunal* (*Ashwagandha*)(*Panneraku)* and limited quantities of *ganneru* and Crossandra (*kanakambaram)*.

Crop details: The FPO supplies 37 varieties of fruits and vegetables to TTD.				
Tomato	Ash gourd	Ladies finger	Bitter gourd	Ridge gourd
Green chillies (White, Black)	Coriander leaves	Banana (green, yellow)	Peas (white, green)	French beans (ring, Kolar)
Cauliflower	Cabbage	Carrot	Little gourd	Potato
Onions	Cluster beans	Cucumber	Bottle gourd	Snake gourd
Raw banana (*Aratikaya*)	Field beans	Colocasia (*Chamadumpa)*	Drumsticks *(Mulakkadalu)*	Leafy vegetables
Mint *(Pudina)*	*Yam (Kanda)*	Beetroot	Capsicum	Radish
Chayote *(Bengaluru Vankaya)*	Brinjal (striped, white)	Ginger (new, old)	Curry leaves *(Karivepaku)*	
Green mangoes	Red pumpkin	Kohlrabi (*Knol Khol*)		

In order to stay far from politics, the FPO is very choosy in allowing farmers to become members. The FPO took a strong stance as to not allow farmers who would likely play politics in the functioning of the FPO to become members. Approximately, 50 members take active part in the activities and functioning of the FPO. Out of these 50, close to 20 farmers play a strong role in the general body meetings and take part in the decision-making process while setting guidelines and directions for the FPO.

Out of these 38 vegetables the vegetables which are not regularly available with the FPO are drumsticks, raw banana, field beans, yam, colocasia, and green peas. These vegetables are purchased from other farmers in the surrounding areas or from the local market or the Rythu Bazar and supplied to TTD.

FPO financial details: The FPO supplies produce worth ₹3 crore to the TTD institutions. Through this transaction, the FPO makes a profit of approximately ₹2,00,000/year after paying off all the interests and salaries. The FPO has 13 permanent employees working with it. The FPO also employs daily wage laborers for sundry jobs like delivery, etc. After the FPO landed the contract with TTD, Mr Singh provided a fund of ₹5,00,000 without interest to the FPO which was slowly repaid by the FPO. He also provided the FPO with the crates necessary for delivery.

The FPO spends close to ₹2,00,000/month for transportation and labor. The FPO appoints six laborers on the day of delivery for grading the produce and distributing it among the various institutions. The FPO also has a driver for the van it utilizes for procuring vegetables from the farmers. The FPO also appoints two laborers in Tirupati to deliver the respective crates of vegetables to each institution. The FPO also employs one employee for flower delivery to the Tirumala Temple and two staff members each for the FPO yard and the agri-input retail outlet run in collaboration with the Rythu Mithra Group.

While purchasing the ½ acre land for the FPO office, as well as for the construction of the building, the FPO took loans from private banks by keeping as collateral the personal property of the President and the Chairman. The FPO took to a ₹10,00,000 loan for the land as well as construction.

After deducting the salaries of all the employees and the loan interests that the FPO pays, the profit for the year 2014–15 was ₹3,00,000.

The FPO received a fund of ₹25,000 from the horticulture department of AP.

It also received a 45 HP tractor, a seed drill and a mulching machine (Figs. 13.12 and 13.13) worth ₹6,00,000 on 100% subsidy from the horticulture department of AP.

The FPO received an 18.5 HP mini tractor from the horticulture department of AP worth ₹1,50,000 on 50% subsidy.

It purchased two 1-ton capacity trucks – vegetable on wheels trucks from the horticulture department of AP at 50% subsidy (Fig. 13.14).

An NGO (Aatma) donated a computer worth ₹20, 000 to the FPO.

Impact: Through the quality improvement workshops and meetings with scientists, the FPO was able to educate farmers on the latest agricultural practices. Previously, close to 90% of the farmers were oblivious to new practices and followed obsolete techniques. The many workshops and interaction sessions helped farmers to update themselves on the latest inputs available as well as farming practices.

Moreover, the group helps farmers get subsidies and benefits from various stakeholders such as the horticulture department of AP, NABARD, etc. Also by directly marketing the farmers' produce to TTD through a contract, the group has increased the farmers' income by 20%.

Welfare activities conducted by the group

- A veterinary camp was conducted and all farm animals were given necessary vaccines.
- School uniforms were distributed to 60 underprivileged students.
- A booklet was printed on cultivation of horticulture (*vanigya*) crops. This booklet was distributed free to all members and sold to all non-members at 50% subsidy.

Figure 13.12. A 45-HP tractor.

Figure 13.13. A mulching machine.

Figure 13.14. A 1-ton capacity van.

- 50 farmers were provided support to get a driving license.
- Conducted multiple training sessions by scientists to all member and non-member farmers.
- All the members get free subscription of the monthly farmer's magazine '*Annadata*'.
- Free health camp was conducted for all the villagers.

Future plans

- To improve the usage of organic inputs and reduce the usage of chemical inputs.
- Forming cooperative groups and helping the farmers understand the importance of working collectively.
- Construct a cold storage so as to store the members' produce.
- By increasing market linkages, reducing the exploitation of farmers by middlemen.
- Conducting monthly workshops regarding best agricultural practices and techniques.
- Construction of a building for conducting monthly workshops and sessions and setting up a library of agriculture related books for farmers to utilize.

Awards received

- Two-time winner of the 'Best Farmer Service' award given by Chittoor Farmers Association (Figs 13.15 and 13.16).

Key learning and analysis: This FPO has set up a good and scalable model of vegetable delivery directly to the consumer. Currently, they need to optimize their functions so as to cater to more number of customers. But they seem to have little focus on optimizing their functions and have more focus on improvising their infrastructure. Right now, the FPO is catering to only 20% of the entire produce of the members. Before constructing a cold storage they need to work towards improving this percentage. Currently, they have no need to store the produce as their demand is higher than their supply. The highest need of this FPO is in terms of optimizing its operations and utilization of resources so as to cater to a wider market.

Figure 13.15. Best Farmer Service Awards given by Chittoor Farmers Association.

Figure 13.16. Best Farmers Award given by Tirupati Rythu Bazar.

14. An Overview of FPOs

The 15 FPOs are all in various stages of functioning. Some are yet to be registered, some are in the initial stages of setting up a system of functioning, some are getting ready to enter the market in this year and some are already participating in trade. Irrespective of the stage at which they are currently in, the FPOs have the same objective i.e. to improve the profit of the farmers and to enhance their income. In this aspect, all the FPOs still need to reach their potential to cater to 100% of their member base.

Support required

Financial support: An FPO is an entity run by farmers who have little or no financial back up. Therefore, to enter into a market and to focus on capturing a large market, the FPO needs proper financial support. But right now there are no proper finance options available and the amount given by NABARD is barely sufficient to establish, let alone facilitate expansion. Only FPOs that are able to keep some collateral and obtain loans from banks are able to create a small market share of their own.

Enhancing knowledge base of farmers: The farmers have very little business sense because of which they lack planning when it comes to setting long-term and short-term goals for the FPO. They lack skills in risk calculation and optimization of their resources. If an FPO has to achieve its potential then the farmers will need to be educated on various business strategies. At a nascent level, the farmers at least need knowledge regarding how to approach markets and establish themselves. They need to understand the various dynamics at play to create their own riche in a market.

Support in planning and management: This is a major problem being faced by the FPO registered under the Companies Act as they need to maintain a lot of records according to the Act. Optimization of resources and financial planning is something that is very important to FPOs that are in Phase 2 of their functioning. The FPOs that have already entered a market and established themselves have exhausted ideas on how to scale up as they lack proper optimization. They also lack proper analysis for taking future steps. Therefore, after an FPO reaches a point, it needs a person with proper business sense and the exposure to the outside markets to handle its functions. Farmers who are low on exposure are unable to visualize the various possibilities for the FPO because of which the functioning of an FPO is limited. They need proper guidance and support in this sector to expand and reach the potential they are capable of.

Knowledge base of officials: When it comes to officials, the knowledge transfer is inadequate. The higher officials have an idea of the policy plans to achieve in the long term as well as the short term, but people who work on the ground directly with farmers need to be provided with capacity improvement.

Key features of the FPOs

FPO	Commodity	No. of members	Turnover in 2016 (in Rupees)	Quantity handled in 2016	Percentage of total produce of all members handled	No. of farmers benefitted in 2016	Percentage of members benefitted out of total members	Value addition in 2016
Chandragudem	Jasmine	250	These 9 FPOs until now focused on quality improvement of produce and establishing a system of functioning. They are yet to create a market share and start activities to generate a turnover.					
Noveeal	Coconut	13,000						
Andhra Kashmir	Turmeric, pineapple	1150						
Manathota	Turmeric, mango, litchi	500						
Pakalapadu	Vegetables	650						
Rythula Jattu	Vegetables, sugarcane	440						
Vizianagaram	Coconut	1500						
Chethana	Groundnut	60						
Anjaneya	Fruits	600						
Chinnaogirala	Vegetables	250	70,000	200 tons	10%	80	32%	2%
Sri Vighneshwara	Banana	216	5,00,000	17,000 bunches	60%	150	70%	20%
Mangaladhri	Turmeric	500	1,50,000	Turnover through renting boiler and polisher and not market trade				15%
Sri Siddeshwara	Mango	350 registered 150 yet to	3,00,000	3500 tons	20%	70	14%	30%
Kisan Suvidha	Mango (2016 – trial year)	70 (by 2017 – 350+)	5,00,000	5000 tons	100%	70	100%	20%
Cheldiganipalle	Vegetables, flowers	145	3,00,000	1160 tons	20%	40	28%	20%

Steps to enhance FPO performance					
FPO	**Organizational**	**Market**	**Infrastructure**	**Plan**	**Capacity building**
Chandragudem Jasmine Collection Center	Formulate new model of functioning with concrete speciality			Formulate a business plan on how to function and how to generate income	
Noveeal Coconut Producers Company Ltd.		Needs market analysis to understand market potential		Formulate a complete market plan on how to tap into potential	Train the executive body to identify coconut market opportunities and potential.
Andhra Kashmir Farmer Producer Company		Market linkages: Aware of potential markets. Needs to formulate steps to reach out	Needs to set up an office and enhance its connectivity through a Mail ID and website	Needs an entire business plan on how to function, and how to create a market share. Also needs to set up a proper executive body and build their capacity to make the FPO run independently with the help of the supporting NGO – Girijan Vikas	Build capacity of farmers in basic business perspectives and forming market connections necessary to take over the FPO.
Manathota Farmer Producer Company	Formulate a model of functioning	Needs market analysis to understand potential	Needs to set up an office and enhance its connectivity through a Mail ID and website		
Pakalapadu Panthulupadu Vegetable FPO	Formulate a model of functioning	Needs market analysis to understand potential	Needs to set up an office and enhance its connectivity through a Mail ID and website		
Rythula Jattu Kuragayala Bellam Utpattidarula Producer Company	Formulate steps to run the decided model	Sign an MOU with the organization that is helping in market connections and plan steps together		Plan on how to enter the market and explore various funding options available	Train the executive body on supply chain of vegetables and operations involved.
Vizianagaram Coconut Producer Federation		Conduct a thorough market analysis to understand market potential		Plan in detail on how to enter markets and do a profit analysis for the same	Train the executive body on coconut market opportunities and potential
Chethana Groundnut FPO	Plan and take strong steps to enhance responsibility of farmers and to make them participate actively			After motivating the farmers to take an active part in the FPO, set a direction for the FPO to formulate further plans	

Continued...

...Continued

Steps to enhance FPO performance					
FPO	**Organizational**	**Market**	**Infrastructure**	**Plan**	**Capacity building**
Anjaneya FPO	Establish proper connection with all members and plan a model of functioning	Plan steps to connect with the many potential consumers available			Train the executive body on how to deal with big corporations for best profit
Chinnaogirala Vegetable FPO	Change the entire model of functioning with a new selling point				Train the executive body on how to improve their organization structure. Provide members with tips on decision-making
Sri Vighneshwara FPO				Properly analyze the needs of the FPO and plan steps to fulfil the needs while scaling functions	Train the executive body on usage of technology
Mangaladhri Agri Producer Company Ltd		Conduct a thorough market analysis to understand the various possibilities. Plan steps to reach out to local markets		Make long-term and short-term plans to improve market share and reduce dependency on Spices Board for support in reaching out to buyers	Train the executive body on basics of marketing
Sri Siddeshwara	Develop the current model to bring about planning and optimization		Set up a proper office with online presence to connect with potential markets	Set a direction of function and plan out concrete long-term and short-term goals	Train the executive body on structuring an organization
Kisan Suvidha FPO	Conduct market analysis to understand the potential markets for expansion			Detailed plan and steps to expand operations of pilot phase to thrice the number of farmers	
Cheldiganipalle Farmers Mutually Aided Cooperative Society		Reach out to more potential markets. Though it involves a little risk, it is necessary to expand operations		Document all the operations being carried out by the FPO and seek specialists' guidance for optimizing the use of resources	Executive body: Optimization of resources and operations management

Notes

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