

Diagnostic Study Report

Zone 4 Cluster, Palakkad District, Kerala

Farmnet Agro Farmer Producer Company Ltd

The programme implemented under:

Department of Agriculture Development & Farmers' Welfare for Formation & Strengthening of FPOs in Kerala (RKVY- 2019-20)

Implementing Agency:

Small Farmers' Agri-Business Consortium, Kerala

Prepared & submitted by:

Ernst & Young LLP (EY)

Agri-Business Promoting Agency (ABPA)

16 February 2022



Contents

1. Introduction	3
1.1 Project Introduction	3
1.2 Project Background	4
1.3 Major Deliverables	5
1.3 Objective of Diagnostic Study	6
1.3.1 Scope of the Diagnostic Study	6
1.4 Methodology of diagnostic study	7
1.4.1 Pre-feasibility Study	7
1.4.2 Field Study	9
1.4.3 Post Field Study	9
2. Agriculture Scenario	10
3. Profile of Producer	18
3.1 Basic Profile of Farmers	18
3.2 Source of livelihood	18
3.3 Annual Net income	18
3.4 Farmer Asset Details	18
3.5 Farm Equipment Details	19
3.6 Details on Subsidy for Buying Farm Equipment	19
3.7 Details on Scheme Under Which Farmers has Availd Subsidy for Buying Farm Equipment	19
3.8 Livestock Details	19
3.9 Irrigation Details	19
3.10 Details on Sources of Input Purchase	19
3.11 Crop Wise Detail- Season/Area/Production/Productivity, etc.	20
3.12 Details on Techniques used for Advanced Crop Production	22
3.13 Details on Financial Services	22
3.14 Details on Marketing/ Selling of Agricultural Produce, Means of Transportation, Storage, Available Infrastructure	22
3.15 Details on assistance under any Govt. of Kerala, Govt. of India Schemes	22
3.16 Details on Field Level Awareness on FPC/FIG/Willingness for registered FPC Share, etc.	22
3.17 Any Other Details	22
4. Key Findings and Conclusion	23
4.1 Key Findings or Observations	23
4.2 Conclusion	26
4.3 Indicative Intervention	26
12. Annexures	27
Annexure 1: Farmer stakeholders consulted	27
Annexure 2: Field Visit Photographs	29
Annexure 3: Diagnostic Survey Questionnaire	30

1. Introduction

1.1 Project Introduction

Farmer Producer Organizations (FPOs) are proposed to integrate small and marginal farmers into the agricultural value chain. To leverage the collective bargaining power of the farmers by produce aggregation, to mitigate the risk in agriculture, improving the access of farmers, Agribusiness, improved access to investments, technology, and inputs and markets.

It is required to work directly with the farmers to make them collectives under the FPO. Aggregating producers into collectives is universally accepted. It is required for creating an enabling environment for the smooth functioning of the producer organisations and helps in overcoming impediments that the farmers face on a day-to-day basis.

There is great scope for FPOs in the future because they can only act as an effective vehicle for technology demonstration, seed production, and dissemination of GAP (Good Agricultural Practices) INM (Integrated Nutrient Management), IPM (Integrated Pest Management), Post-harvest management and value addition. The main objective of the FPO is to organise the collection of Agri produce, processing, storage, and marketing of their members' produce in high-value markets at an optimal price, thus reducing transaction costs and allowing the Farmer Producer Companies to enter into partnership with private and public sector companies to supply aggregated farm produce in bulk on more favorable terms.



Govt. of Kerala intended to promote Farmer Producer Organisation registered under the Companies Act, 2013 as the most appropriate institutional form to mobilise farmers and build their capacity to collectively leverage their production and marketing strength.

FPO will support its members in securing higher incomes by undertaking any/many/all of the activities listed in previous sections: by aggregating the demand for inputs, an FPO can buy in bulk, thus procuring at cheaper price compared to individual purchase. Besides, by transporting output in bulk, cost of transportation is reduced and also direct market connectivity is facilitated.

An FPO may aggregate the produce of all members and market in bulk, thus, fetching a better price per unit of production. Furthermore, an FPO can also provide market information as well as credit as well as common facilities to member producers to enable value addition and to hold on to their produce till the market prices become favorable. All such interventions are expected to result in increasing incomes of the member farmers and primary producers.

1.2 Project Background

Govt. of India has identified farmer-producer organizations registered under the special provisions of the Companies Act, 2013 as the most appropriate institutional form to mobilize farmers and build their capacity to collectively leverage their production and marketing strengths. Collectivization of producers especially small and marginal farmers, into producer organizations have emerged as one of the most effective pathways to address the challenges of agriculture. It ensures improved access to investments, technology, inputs, credit, insurance value addition, and markets.

The concept of collective strength is not new. Cooperatives are working traditionally for the farmers benefit and Agri development by supplying credit and other services. However, most of these institutions are weakened due to poor financial resources and lack of professional management. This resulted to defunct institutions. Hence, the context of collective efforts needs to re look in terms of extent of work, ownership, and participation of farmers in the process.

In agriculture and Agri - the allied sector most of the collectives have disproportionately focused on the production side while providing very little attention to processing, value addition, and market linkages. Hence it requires farmer-controlled institutions to engage in a more holistic and end-to-end approach to addressing the issues faced by the small farmer. Traditional cooperative societies were developed based on single activity; however, with changing scenarios, a holistic value chain approach is required to develop a sustainable collective Institution. Proposed Farmer Producer Organizations (FPO), therefore, consider interventions starting from procurement/Initial services to production and processing to marketing in a collective form.

Implementing Agencies are supporting this intervention by setting up Agribusiness Promoting Agency (ABPA), at the District / Cluster level to form and promote FPOs as per their requirements. ABPAs are entrusted to assist in the implementation of the program as per scheme guidelines and as may be suggested by the PMU-CA and SFAC-Kerala. The ABPAs are entrusted to carry out baseline surveys, cluster finalization, value chain study, Cluster Diagnostic study, formation of groups and FPOs and assist in their periodical meetings, registration of FPOs, training, and capacity-building, linking these bodies to input suppliers, technology providers, market players, etc.

To mainstream the process of institutional development of Farmer Producer Organizations, as per TM (1)11560/2020 Dated 30-06-2020 the Director, Department of Agriculture Development and Farmers' Welfare approved RKVY 2019-20- Operational Guidelines for FPOs in Kerala. Selected Ernst & Young LLP (EY) has prepared this Cluster Diagnostic Report on the basis of these guidelines to promote a farmer Producer Organization (FPO) under the Scheme of RKVY-2019-20.

1.3 Major Deliverables

S. No.	Components	Time Period
1	1. Cluster Identification based on Agro-Ecological Unit/Zone, Feasibility Study and Analysis, Baseline Surveys and Assessment, Groundwork including publicity, desk reviews, field visit, meeting with cluster farmers, SHGs, NGOs, Cooperatives, VFPC, HortiCrop and PSUs in prospective areas, 2. Conducting diagnostics studies 3. Identification of FPOs	3 months
2.	Preparation of Farmer Community Participation based Value Chain Analysis and customized Business Plan Preparation, Mobilization of Farmers, and Organizing FIG's	2-3 months
3.	Preparation of Memorandum and Articles of Association	2-3 months
4.	Training and Capacity Building - Business planning & management exposure visits, training on bookkeeping, accounting, etc. Training to Board of Directors	3-6 months
5	Registration of FPOs as FPC Licensing - GST, Input license for sales of biofertilizers, fertilizers, seeds and pesticides, FSSAI, Pollution Control Board: Consent to establish & consent to operate, Panchayat/LSGD/KSIDC/Udyog Aadhar, IE Code and other mandatory registrations/ Licenses	3-6 months
6	Development of MIS software & process tracking, Apps, Call Centre, and database of FPOs	3-6 months
	Interim review and monitoring.	6 months
7	Incubation and Marketing support services for implementation of business plan 1. Input facilitation	6-9 months
	2. Establishment of custom hiring center, linkage with Agro Service Centers, Kerala State Agro Mechanization mission, Preparation of Agro Machinery Bank, Linkage with SMAM, etc.	6-9 months
	3. Common Facility Centre/Packhouse for procurement, primary, secondary, minimal processing, sorting, grading, packaging, storage, ripening chambers, etc.	6-9 months
	4. Linking with central and state Government schemes like Janakeeyasoothranam, SAMPADA, Special Economic Zones, PMEGP, NHB, SFRUTI, and other MoMSME schemes, etc.	6-12 months
	5. Equity grant, Credit guarantee fund, Venture Capital Assistance of Central SFAC, and other sources	6-12 months
	Interim review and monitoring. Management and financial audit	12 months

8	Incubation, Marketing support, and forward linkages Linking with e- NAM, e-commerce portals, Online marketing channels, etc. Linkage with financial institutions	6-15 months
9	Establishment of Brands, designing Logos and packaging, Branding, Registration, etc.	6-15 months
10.	Conduct of Buyer seller meets	6-18 months
11	Assessment and Audit, Mid-term evaluation, and grading of FPCs	18 months/ As required by SFAC Kerala
12	Exploring diversification, Value addition, and expansion Exploring export potential, licenses, and clearances	6-24 months
13	Buyer sellers meet Management and financial audit	6-24 months
14	Exploring the possibility of Organic and GAP certification and marketing under India/ Kerala Organic or Safe- to- Eat Brands	6-30 months
15	Tie-ups/ linkages with retail change at domestic and international levels or developing own retail chains/outlets and developing technology for Blockchain in agriculture and setting up of modern supply chain system	6-30 months
16	Linkage with NABKISAN, NABFIN etc.	6-36 months
17	Final evaluation and grading of FPOs/FPC's Management and financial audit	30-36 months/ As required by SFAC Kerala
18	Sustainability and Final phase-out	36 months

Over a period of 36 months from the start of inception

1.3 Objective of Diagnostic Study

The major objective of the Diagnostic Study is to assess the preliminary situation of the farmers and the level of agriculture in the area. The study will also help in identifying the potential interventions required and understand the specific project implementation context.

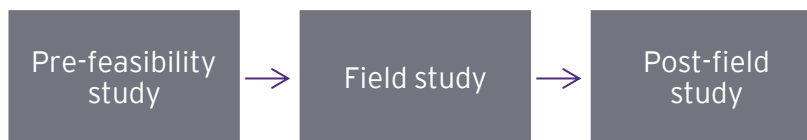
1.3.1 Scope of the Diagnostic Study

The scope of the Diagnostic Study envisages mapping the existing agriculture and agri-business scenario of the cluster to assess the underlying strength, weaknesses, and opportunities of the major crops and to suggest a way forward for enhancing the competitiveness of the concerned farmers to ensure their sustainable growth in terms of crop productivity, reduced cost of production, farm mechanization, technological upgradation, post-harvest quality up-gradation, processing efficiency, brand building, etc.

The study will target at least six major selected villages in the cluster, spread across important locations in Palakkad district of Thrithala block. The purpose is to understand the crop profile including the no. of traders and sales mechanism, area and business network with other markets, and formulate a subsequent strategy for new FPC formation.

1.4 Methodology of diagnostic study

The Cluster diagnostic study was conducted in three phases as mentioned below:



1.4.1 Pre-feasibility Study

1. Preliminary discussion with the client

A preliminary discussion was done with the officials of the Department of Agriculture both at the Headquarter (Trivandrum) as well as at the district and Cluster level with respective Project Directors- ATMA, ADAs, PAOs, and AOs to understand the existing scenario of farmers and crop production with context to the project area. The clusters in the district and the villages in the clusters were finalized after brainstorming with the respective officials and extensive field visits. The whole study plan was briefed and shared to facilitate smooth coordination and timely execution of the field plan.

2. Secondary Data Research

Secondary data regarding the 3-year district-wise crop production of Kerala state was collected from the Department of Horticulture- H.Q., located in Trivandrum Similarly, data concerning the clusters of respective districts were collected from the offices of PD- ATMA/ PAOs. HOs supported in retrieving the village-wise crop production data of concerned clusters. The websites of Kerala. Govt., NHB, CDB, etc. helped retrieve national/international statistical data concerning Agriculture scenario in the country.

The secondary research helped to understand the ongoing project intervention (Agriculture related schemes) very well and further aided in designing the data collection tools (Questionnaire and Checklist) properly for In-depth Interviews and Focus Group Discussions.

3. Identification of Cluster

The team from EY LLP has identified the cluster (Mandal) considering the following factors:

- The cluster needs to cover major commodities from the area catering to both the seasons/ Annual/ Perennial
- All the identified clusters need to be within 50 to 60 KM from the middle/central cluster.
- The cluster needs to have more than 3,000 to 4,000 cultivators.
- The cluster needs to be identified based on the insights given by the SFAC-Kerala & district officials.
- Avoided clusters having existing functional and active FPOs:

1. Data Tool Designing

Data tool designing was done with help of secondary data and along with the lines of study objectives. Data collection tools consisted of an In-depth Interview Questionnaire and a Checklist of Focused Group Discussions. Questionnaires were prepared to collect data from the individual farmers (as per the drafted sample size) through one-to-one in-depth interviews, especially for quantitative analysis. Whereas FGD Checklists were designed for extensive discussion with a group of farmers to collect qualitative data.

- FPOs registered under MACS Act and Companies Act.
- Mobilized Share Capital more than INR 1,00,000.
- FPOs undertaking some business activity like input business, custom hiring centre, primary or secondary processing, commodity trading, etc. and having

Data collection was done using the format provided in Annexure 3. Once the data is collected it is entered into Microsoft Excel for further analysis and reporting.

2. Sample Size

To conduct the diagnostic study at the cluster level, the sample size for in-depth interviews was taken as at least 60 farmers in a cluster with the distribution of the number of respondents per village based on the farmers' population of the village.

3. Sampling Methodology

Clustered random sampling methodology was followed to initially finalize the villages for the diagnostic study in the cluster. The villages were selected based on the population size of the farmers as well as their accessibility to the social mobilizers, representatives of Team EY LLP, within a radius of 60 km from the central village.

In the selected villages, **Simple random sampling** was followed for the in-depth interviews wherein every farmer in the village being studied had an equal chance of being selected.

4. Field plan preparation

The field plan mainly focussed on the allocation of number of in-depth interviews and FGDs to be carried out by the members of Team EY LLP per day to complete the data collection within the estimated time.

1.4.2 Field Study

1. Pilot Testing of Data Collection Tools

A pilot test of the designed data collection tools helps to check the appropriateness of questions to the target population. It also tests the correctness of the instructions to be measured by whether all the respondents in the pilot sample can follow the directions as indicated. It also provides better information on whether the type of survey is effective in fulfilling the purpose of the study.

Therefore, the pilot study FPO catchment area in Thrithala Block in Palakkad district. Based on the feedback, the FGD checklist was modified and finalized.

2. Data Collection:

To understand the cluster, its pre-harvest and post-harvest agriculture scenario, and existing barriers to growth, in-depth interviews and meetings were conducted with farmers from the region. The information was collected for the following:

- Socio-economic profile of farmers
- Crop Production System
- Major Crops and their Pre-harvest practices
- Post-harvest practices
- Current Processing Status
- Agri- markets
- Warehouses/Cold storage
- Others

1.4.3 Post-Field Study

Data Entry: Data collection was done using the format attached in annexure 3 of the report. Once the data is collected it is entered into Microsoft Excel for further analysis and reporting. The qualitative data collected through FGDs were incorporated in the report directly as per the appropriate topics under discussion.

Data analysis: Data analysis consists of inspecting, cleansing, transforming, and modeling data to discover useful information, informing conclusions, and support decision-making. Data initially obtained, processed, or organised for analysis. For instance, it involved placing data into rows and columns in a tabular format (i.e., structured data) for further analysis, within the spreadsheet. Data cleaning was done to remove incomplete, duplicates, and other errors. Descriptive statistics, such as the average or median was generated to help understand the data. Data visualization was also used to examine the data in graphical format, to obtain additional insight regarding the messages within the data.

Diagnostic report preparation

The Cluster Diagnostic Report contains the following Chapters-

- Introduction to Project
- Horticulture Scenario
- Profile of producer
- Production Management

- Post-Harvest Management
- Conclusion and the way forward
- The report presented to the client & finalization of the reports
- The key findings of the Diagnostic report would be presented in front of the respective officials from EY LLP and after incorporating their feedback, if any, the report is being submitted finally for record and further action.

2. Agriculture Scenario

2.1 Global Scenario

Agriculture is also crucial to economic growth: in 2018, it accounted for 4% of global gross domestic product (GDP) and in some developing countries, it can account for more than 25% of GDP. Agricultural development is one of the most powerful tools to end extreme poverty, boost shared prosperity, and feed a projected 9.7 billion people by 2050. Growth in the agriculture sector is two to four times more effective in raising incomes among the poorest compared to other sectors. Analyses in 2016 found that 65% of poor working adults made a living through agriculture.

One-third of food produced globally is either lost or wasted. Addressing food loss and waste is critical to improving food and nutrition security and meeting climate goals and reducing stress on the environment on the other hand. A World Bank report of 2021 report found that between 720 and 811 million people went hungry in 2020, more than 10% of the world's population.

Food insecurity can worsen diet quality and increase the risk of various forms of malnutrition, potentially leading to undernutrition as well as people being overweight and obese. The cost of healthy diets is unaffordable for more than 3 billion people in the world.

2.2 Indian Scenario

Indian producers are unable to realise optimal value from their products mostly due to fragmented land holdings and segregated farming, selling of produce, or buying of required inputs like fertilisers, seeds, etc. India has over 14.5 crore farmer households of which over 86.2% are small and marginal farmers with land holdings of less than 2 Ha. The average size of land holding is 1.33 hectares/ farmer household (HH). Due to the fragmented land holding and segregated farming, selling of produce, or buying of required inputs, farmers do not find it economically viable to either adopt any latest technology or use high-yielding varieties of inputs. Further, farmers also are unable to realise good value from their marketable surplus by selling their products individually.

Through having a Producer Organisation, producers can utilise scale to procure inputs at a lower price and achieve more selling power for their produce. This will also help provide access to timely and adequate finance, build capacity, and provide linkages to markets.

Status of Agriculture:

Indian scenario of Food grains and other agriculture crops: (Statistics, 2022)

#	Year	Production				
		Total Food Grains (million tonnes)	Total Oil Seeds (lakh tonnes)	Sugarcane (lakh tonnes)	Cotton (Lakh bales of 170kg each)	Jute & Mesta (Lakh bales of 180kg each)
1	2019-20	297.5	332.19	3705.00	360.65	98.77
2	2020-21	310.74	359.46	4053.99	352.48	93.54
3	2021-22 (Second advance estimate)	316.06	.47	4140.44	340.63	95.7

Indian scenario of Horticulture crops (Welfare, 2022)

#	Crops	2019-20		2020-21		2021-22 (First advance estimate)	
		Area (000' Ha)	Production	Area (000' Ha)	Production	Area (000' Ha)	Production (000' MT)
1	Fruits	6,774	1,02,080	6930	102481	6,967.32	1,02,924
2	Vegetables	10,310	1,88,284	10859	200445	11,065.06	1,99,882
3	Plantation	4,143	16,116	4255	16629	4,270.64	15,852
4	Aromatic & medicinal	641	734	653	825	649.71	767
5	Flowers	323	3,000	322	2980	267.00	2,886
6	Spices	4,291	10,137	4457	11117	4,343.98	10,816
7	Honey	-	120	-	125	-	125
8	Total	26,482	3,20,471	27,476	3,34,603	27,563.33	3,33,251

2.3 State Scenario

Kerala is located along the coastline to the extreme southwest of the Indian peninsula, flanked by the Arabian Sea on the west and the mountains of the Western Ghats on the east. The state has a 580 km long coastline. Malayalam is the most commonly spoken language. Hindi, English, and Tamil are the other languages used. Kochi, Kozhikode, Kollam, Thrissur, Alappuzha, Palakkad, Thalassery, Ponnani, and Manjeri are some of the key cities in the state. There are 44 rivers flowing through Kerala, the major ones being Periyar (244 km), Bharathapuzha (209 km), and Pamba (176 km). Out of these 44 rivers, 41 are west flowing and 3 are east flowing. At current prices, Kerala's GSDP was about Rs 8.76 trillion (US\$ 125.27 billion) in 2019-20. The state's GSDP recorded a CAGR of 11.59 percent between 2011-12 and 2019-20.¹

Kerala Key Highlights		
State capital	Thiruvananthapuram	
Geographical area	38,863 Sq. Km	
Population (Census 2011)	33.41 Million	
Gross state domestic product (GSDP)	Rs 8.76 trillion (US\$ 125.27 billion) in 2019-20 at current price	
Per capita income	Rs 199,101 (US\$ 3,089) during 2017-18 as compared to Rs 108,666 (US\$ 2,318) during 2011-12 Per capita, GSDP increased at a CAGR of 8.73 percent between 2011-12 and 2017-18	
FDI inflows	USD 2.24 Billion- FY00-FY19	
Total road length (kms)	33,594 km	
Rail length (route kms)	1,045 Km	
Ports	Major port: 1 Intermediate ports: 3 Minor Ports: 15	
Airports	Four	

In terms of cropping pattern in Kerala, the gross cropped area in Kerala has declined from 29,33,000 hectares in 1970-71 to 25,79,000 hectares in 2017-18, registering a decline of about 12 percent. As of 2017-18, the gross cropped area in Kerala stands at 25,79,000 hectares while the net sown area is 20,40,000 hectares. However, the gross irrigated area stands at only 21 percent of the gross cropped area and has increased at a very slow pace from 3,81,000 hectares (13 percent of GCA) in

¹ Kerala at a glance, Economic Review of Kerala, 2014-15, Government of Kerala website, Census 2011, Central Statistics Office

1980-81 to 5,40,000 hectares (21 percent of GCA) in 2017-18. The slow growth in the irrigated area has a major bearing on production and productivity in the agriculture sector in the state.

The total number of operational holdings in Kerala is 68,31,000 of which 96% i.e., 65,80,000 operational holdings fall in the marginal landholding category. On the other hand, in terms of area operated, marginal landholdings constitute only 59%, while landholdings in the size range of 1-1.99 ha constitute 19%. Operational holdings under the size class of 2.00 to 10 ha and above, constitute only 1 percent of the total landholdings whereas in terms of area operated, they constitute 15 percent of the total area under operational holdings in the state.



In Kerala, over the years, service sector has grown in importance, while agriculture sector and its role in value added and generation of employment has declined consistently.

The total cropped area of the State has been declining consistently, from 30 lakh hectares in 2000 to 25.79 lakh hectares in 2017-18. The net sown area has recorded a slight decline of 8.64 percent, and the area sown more than once has declined by 30.29 percent. Current fallows have decreased by 7.5 percent whereas the “fallows other than current fallows” as well as “cultivable wasteland” have recorded an increase of 63.38 percent and 71 percent respectively. Thus, the land that is fit for cultivation but is not being cultivated is on the rise signaling the tendency of people to keep land fallow for various reasons.

Share of agriculture and allied sectors in GVA and GSVA: The share of agriculture and allied sectors in the total Gross State Value Added has been declining consistently, in consonance with the all-India trends. The share of agriculture and allied sectors in total GVA (India) and GSVA (Kerala) over the period from 2012-13 to 2017-18 is presented in the table.²

Year	Share of agriculture and allied sectors in total GVA (India)	Share of agriculture and allied sectors in total GSVA (Kerala)
2012-13	17.8	13.77
2013-14	17.7	12.37
2014-15	16.5	11.92
2015-16	15.4	10.74
2016-17	15.3	10.26

There has been a steady decline in the gross area under food crops in Kerala between 1970-71 and 2017-18. Over time, the state has shifted to the cultivation of commercial crops/plantation crops and spices on a larger scale. While the gross area under rice cultivation has declined to almost one-fifth of the area cultivated between 1970-71 and 2017-18, the area cultivated under rubber has trebled and that under coconut has increased, although not at a considerable pace. The area under pulses has registered the highest rate of decline and at present, only 2,000 hectares are under pulses cultivation. The area under rice and pulses which in 1970-71 constituted 31 percent of the Gross Cropped Area, has come down to 7.4 percent in 2017-18. Since pulses are a rich source of protein and are water-efficient, promoting the cultivation of pulses would augur well for the nutrition security and food security of the state. Of late, experiments such as labour banks have taken shape, in an attempt to pool in workers to cultivate fallow lands and leased areas under cultivation, which may have been responsible for the slight increase in the area under cultivation under rice between 2016-17 and 2017-18. The experiment has been active in the districts of Palakkad and Thrissur, which are among the major rice-growing regions in the state. Whereas on the other hand, the gross

² State Level Bankers Committee, Kerala, Retrieved on 28th February 2021, <http://slbckerala.com/>

cropped area under rubber cultivation has increased from 6 percent of the GCA in 1970-71 to 21 per cent in 2017-18.³

#	Crop/year	1970-71	1990-91	2012-13	2016-17	2017-18
1	Paddy	1298	1087	509	436	521
2	All pulses	13	17	3	2	2
3	Rubber	88	308	800	540	541
4	Coconut	3981	4232	5799	5379	5230
5	Pepper	25	47	46	34	38
6	Cardamom	1	3	10	17	18
7	Ginger	20	46	22	20	19

**Area in Hectare*

The production of paddy has decreased in consonance with the decrease in the area cultivated. The production of pulses has remained stagnant over the immediate preceding years. In the case of rubber, production, and productivity had peaked and the price situation in international markets had turned favorable during the 2000s. However, Kerala's share in national rubber production has come down from 92% a decade ago to 69.66% owing to an increase in the cultivation of rubber in non-traditional regions such as the North-East.

Rainfall: Agriculture in Kerala is mostly dependent on rainfall. Following the great floods of 2018, rains spread havoc in 2019 in the northern districts of Kerala during the South-West Monsoon. The pre-monsoon rainfall received during the period from March-May 2019 was categorised as "deficient" by IMD. The rainfall received during this period was 55 percent less than the normal rainfall of 379.7 mm as against 169.6 mm. Wayanad was the only district reported to have received normal rainfall, although the rainfall was 2 percent less than the normal levels.

Livestock Sector: The livestock sector is an important sub-sector of the agricultural sector of the economy. It provides self-employment opportunities to the unemployed in rural areas and also acts as an additional source of income for farmers engaged in the cultivation of crops. The progress in the livestock sector is bound to lead to increased incomes and a better standard of living for rural families. At the all-India level, the share of the livestock sector in total GVA of the agriculture sector was to the extent of 26.2 percent in 2016-17 at constant prices, while in Kerala, the share of livestock in GSVA from the agriculture sector is close to 27 percent, slightly higher than the all-India level.

As per the 19th Livestock census (2012), the livestock population in the State is 27.35 lakh. It is 23 percent less as compared to the previous census. The primary reason for this is the decline in the population of cattle and goats. As per the 20th livestock census, the poultry population of Kerala is 29.8 million, reflecting a 23 percent increase over the poultry population of 24.3 lakhs as per the 19th livestock census. Milk, meat, and egg are the major livestock products in Kerala.

Among the milk-producing States in the country, Kerala ranks 14th, with a share of 1.5 percent of the production. The production of milk increased from 25.20 lakhs MT in 2016-17 to 25.76 lakh MT in 2017-18. The per-capita availability of milk in Kerala declined from 202 gm per day in 2016-17 to 192 gm per day in 2017-18, which is just above half of the national average per capita availability

³ State Level Bankers Committee, Kerala, Retrieved on 28th February 2021, <http://slbckerala.com/>

of milk of 375 gm per day. Kerala Co-operative Milk Marketing Federation (MILMA) is one of the most important agencies for milk procurement in the state.⁴ During 2017-18, except in Ernakulam, Palakkad, and Wayanad, sales of milk exceeded procurement. The shortfall between milk procurement and sales was met by arranging milk from state milk federations of Karnataka, and Tamil Nadu and the purchase of skimmed milk powder. To facilitate increased production of milk in the state, several programs are being undertaken in the state such as: the Special Livestock Breeding Programme, the Involvement of Kerala Livestock Development Board in the production and distribution of frozen semen, Promotion of dairy zones under the scheme, 'Commercial Dairy Milk and Milk Shed Development Programme, Focus on Fodder and feed production and Emergency veterinary care services, animal health care services and production of vaccines for animals.

The total production of egg in the country in 2017-18 stood at 9,520 crores and has been steadily on the rise since 2000-01. Per-capita availability of eggs has also been on the rise steadily with the figure in 2017-18 at 74 per annum. The largest producer of eggs is Andhra Pradesh (18.7 percent of total production) with a per capita availability of 341 eggs per annum, which is significantly higher than the national average. Kerala ranks 10th in India in terms of egg production. The total egg production in the State was 2.23 billion eggs in the year 2012-13 and continued to rise and reached 2.50 billion in the year 2014-15. Since then it declined to 2.44 billion in 2015-16 and further to 2.34 billion in 2016-17. The per-capita availability of eggs stands at 64 eggs per annum in Kerala (2017-18).

Kerala is the 8th largest meat-producing state in the country, accounting for 6.1 percent of the meat produced in India. Out of the total meat produced, 38.8 percent is poultry meat, 33.95 percent is sourced from cattle, and 20.99 percent from buffalo. Goats and pigs contribute 4.78 percent and 1.47 percent of the meat production in the state. (Source: Economic Review 2018)

Kerala occupies a very important place in the fisheries map of the country. India ranks second in terms of inland fish production and sixth in marine captured fish (Source: Economic Review 2018). While the total fish production in India in 2016-17 (provisional) was 114.09 lakh tonnes, in Kerala, the production stood at 6.76 lakh tonnes. The total fish production in Kerala during 2016-17 was 6.67 lakh tonnes, of which marine accounted for 4.88 lakh tonnes and inland fish production was 1.88 lakh tonnes. Fisheries and aquaculture contribute around 8.5 percent of the GSVA from the primary sector which is of much significance to the state economy.⁵

Overall, Kerala is one of the leading pepper and rubber producers in the country. Kerala is the leader in rubber production in the country. The state accounted for about 78 percent share in the total natural rubber production in 2017-18. Natural rubber production in Kerala stood at 551 thousand MT during 2017-18.

Kerala can be termed, the land of spices, considering the large variety of spices grown in the state. Kerala is the largest producer of pepper in India and accounts for a lion's share in India's production. Apart from pepper, other spices produced in the state include ginger, cardamom, nutmeg, tamarind, etc. During 2019-20 (till Sept 19), spices export from the state stood at US\$ 208.89 million.

⁴ State Level Bankers Committee, Kerala, Retrieved on 28th February 2021, <http://slbckerala.com/>

⁵ State Level Bankers Committee, Kerala, Retrieved on 28th February 2021, <http://slbckerala.com>

2.4 District Scenario

Palakkad is one of the fourteen districts of Kerala and has no coastal line. The district opens the state to the rest of the country through the Palakkad Gap with a width of 32 to 40 Km. Its geographical position, historical background, educational status, tourism hot spots, and above all, the development activities that are carried out, are wide and varied. The district is one of the main granaries of Kerala and its economy is primarily agricultural. The district is also the land of Palmyrahs. (Administration, 2022)

Brief Profile of Palakkad District (Statistics D. o., 2021)

S. No.	Particulars (2019-20)	Details
1.	Total geographical area (Ha)	4,47,584
2.	Total forest area (Ha)	1,36,257
3.	Total cropped area (Ha)	2,76,354
4.	Land put to non-agriculture use (Ha)	47,068
5.	Net area sown (Ha)	2,01,783
6.	Area sown more than once (Ha)	74,571

1. The district had an area under crops of about 78,163 Ha in the year 2019-20.
2. Palakkad district with 76,783 Ha. (40.19 % of the total wetland paddy area in the state). In the year 2018-19, it was 76943Ha.
3. Palakkad district occupies 1st place in the Autumn & Winter seasons, and Alappuzha district occupies 1st position in the summer season.
4. Tur is cultivated in the Palakkad and Pathanamthitta districts and the major cultivation of pulses is in the Wayanad district in 2019-20.
5. Palakkad has more cultivation of Palmyrah with an area of 800 Ha and it is 42.71% of the total area of palmyrah in the state.
6. The area under cultivation of turmeric is highest in Palakkad district (391Ha) during 2019-20 and is 17.17 % of the total turmeric cultivation in the state.

2.5 Cluster Scenario - Palakkad

S. No.	Particulars	Details
1	Cluster - Total blocks	9
2	District headquarters	Palakkad town
3	Major national highways	NH 17, NH 47, and NH 213
4	Major state highways	SH 22, SH 23, SH 25, SH 26, SH 27, SH 39, SH 52, SH 53, SH 58, SH 62, and SH 74
5	Nearest airport	Coimbatore International Airport
6	Revenue divisions	2
7	Taluks	7
8	Revenue villages	157
9	Municipalities	7
10	Block panchayats	13
11	Village panchayats	88

3. Profile of Producer

3.1 Basic Profile of Farmers

The quantitative analysis of the baseline survey of 60 respondents from the Thrithala cluster shows that Based on the area of cultivation (83.33%) are marginal farmers, (13.33%) are small farmers, and (3.33%) are semi-medium farmers, (0%) are medium farmers, (0%) of large farmers. In terms of caste profile, 16.67% of the respondents belong General category, and 83.33% of the respondents belong to the OBC category. Out of the total respondents, 85% were males and 15% were females.

3.2 Source of livelihood

Primary Source

While we analysed the primary source of income from our diagnostic survey

1. 88.33% of the farmers are practicing farming as a primary livelihood.
2. 1.67% of the respondents are having livestock rearing as their primary livelihood.

Secondary Source

As per the analysis from the data collected the following is the analysis of the secondary source of income of the farmers.

1. 16.67% of the respondents are considering farming as the secondary source of livelihood generation.
2. 23.33% of the respondents are practicing private jobs as their secondary source of livelihood.
3. 5% of the respondents are having business as the secondary source of livelihood generation.

3.3 Annual Net income

Primary Source

While analysing the primary source of income we learned that the average primary source of income of the respondents was Rs.1,07,111/annum. The maximum amount of income is Rs.2,50,000/ annum. The minimum amount of net income is Rs. 50,000/- per annum.

Secondary Source

While analysing the secondary source of income we learned that the average secondary source of income of the respondents was Rs. 50,000/annum. The maximum income of the respondents from the secondary source of income is Rs. 1,00,000/ annum. The minimum net income of the respondents from the secondary source of income is Rs. 1200/ annum.

3.4 Farmer Asset Details

General Assets: 100% of the respondents live in Pucca houses with 100 % electrification facilities. 80% of households are having two-wheeler. 95% of the respondents are having two-wheeler and

1.67% of the respondents are having three-wheeler. 11.67% of respondents' households are having four-wheelers. Smartphones were owned by 100% of respondents.

Agriculture Land Details: 83.3% of respondents are marginal (<2.5 acres) land holdings, 13.3% of respondents are small (2.5 to 5 acres) land holdings, 3.3 % of respondents are having semi-medium (5 to 10 acres) land holdings, 0% of respondents are having medium (10 to 25 acres) land holding, and none of the respondents are having large (>25 acres) land holding. 100% of the respondents are having their own land (On an average of 1.69 acres of land holding). 100% of the land is under cultivation. On average 1.61 acres are irrigated. 16.67% of the respondent have also taken land on lease. None of the respondents have given land on lease.

3.5 Farm Equipment Details

From the survey collected, 31.67% of the farmers are owning pump-set. 1.67% of the farmers are owning power tillers. 1.67% of the farmers are owning micro irrigation.

3.6 Details on Subsidy for Buying Farm Equipment

1.67% of the farmers have availed of subsidy from Krishi Bhavan.

3.7 Details on Scheme Under Which Farmers Have Availed Subsidy for Buying Farm Equipment

The subsidy is availed to purchase a power tiller.

3.8 Livestock Details

1. 21.67% of the respondents are rearing cows.
2. 1.67% of the respondents are rearing Goat.
3. 1.67% of the respondents are rearing ducks.

Out of the analysis, most of the farmers are rearing cows.

3.9 Irrigation Details

1. 80% of the respondents are getting irrigation through a well.
2. 35% of the respondents are getting irrigation through borewells.
3. 18.33% of the respondents are getting irrigation through the pound.
4. 10% of the respondents are getting irrigation through the river.
5. 5% of the respondents are getting irrigation through the canal
6. 1.67% of the respondents are also dependent on rainwater for irrigation.

3.10 Details on Sources of Input Purchase

Seeds

68.3% of the respondents are buying seeds from local traders and 10% of the respondents are buying seeds from Cooperatives and 65% of the respondents are buying seeds from FPC and KB. The major crops they cultivate are Paddy, Coconut, and Vegetables.

Fertilizer

31.67% of the farmers are sourcing fertilizer from local traders and 3.33% of the respondents are buying seeds from Cooperatives and 48.33% of the respondents are buying seeds from FPC and KB.

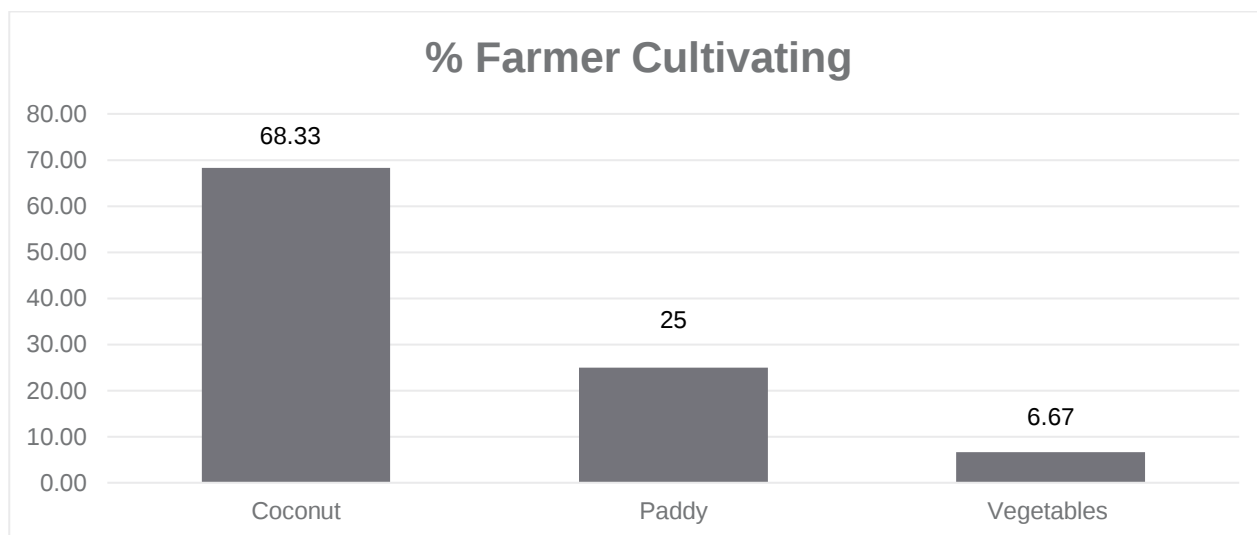
Pesticides

35% of the farmers are sourcing from local traders and 70% of the respondents are buying seeds from Cooperatives, FPC, and KB.

3.11 Crop Wise Detail- Season/Area/Production/Productivity, etc.

Major Crop 1

As per the data collected, below is the illustration of the crop details



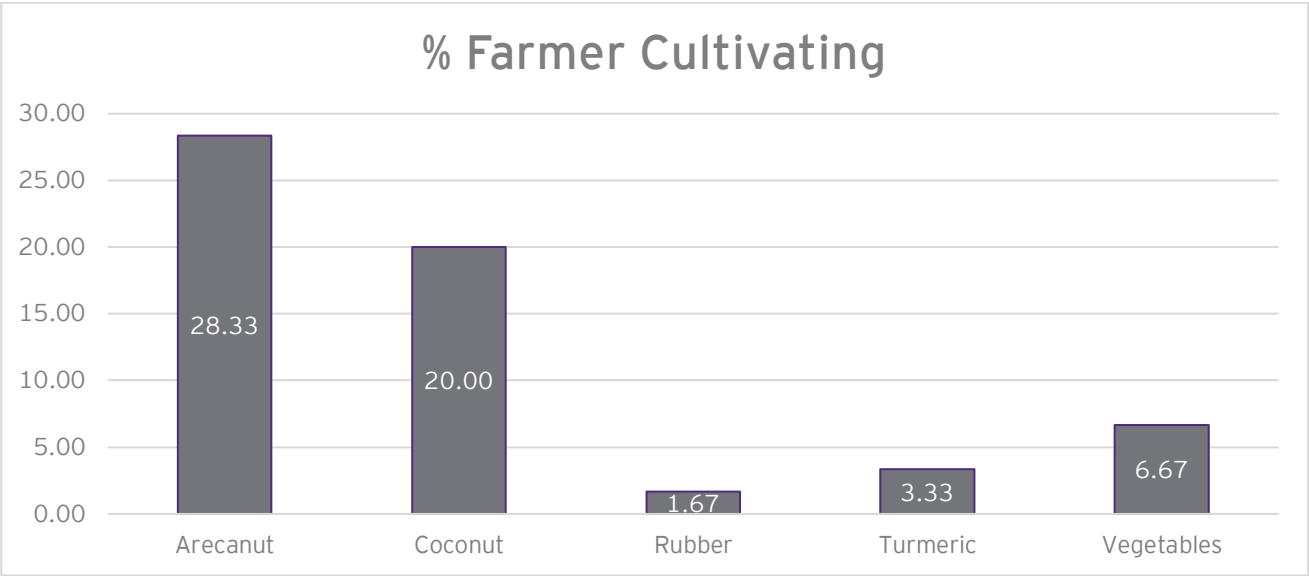
Coconut is the major crop as responded by the interviewees. In total 68.33% of the respondents are cultivating Coconut.

Paddy is one of the major crops that the farmers are cultivating. In total 25% of the respondents are cultivating Coconut.

Vegetables are one of the major crops that farmers are cultivating. In total 6.67% of the respondents are cultivating vegetables.

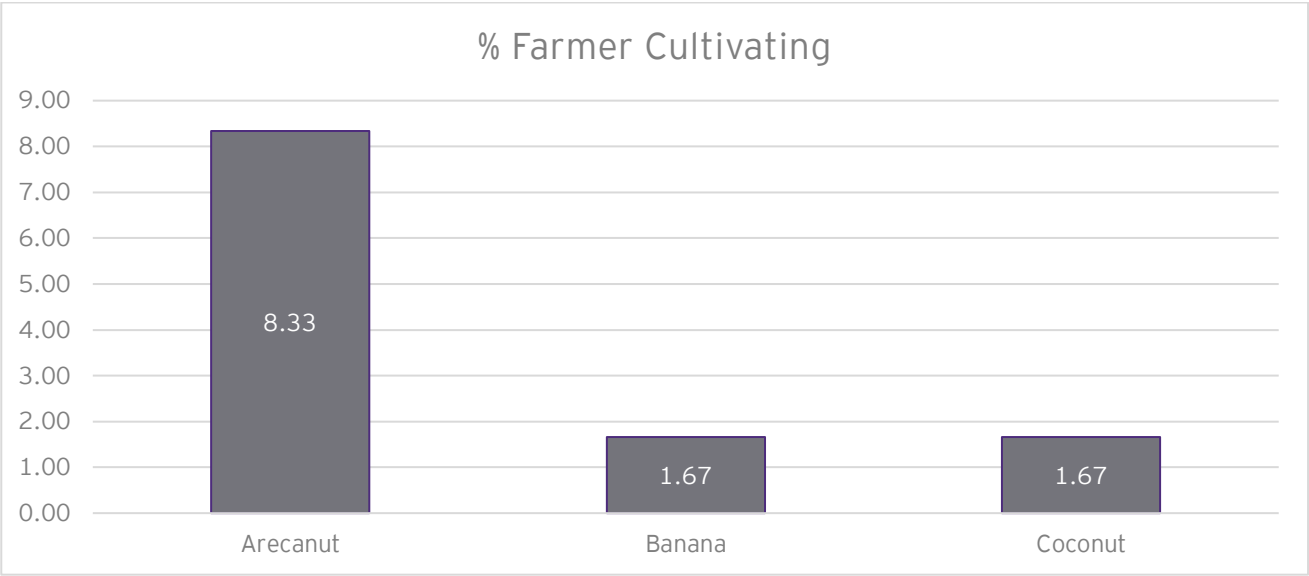
Major Crop 2

Coconut is cultivated as a perennial crop. Coconut is also grown by some farmers as the second major crop as per the survey 20% of the respondents are cultivating Coconut. Arecanut is cultivated as the second major crop 28.33% of the respondent. Vegetables are one of the second major crops that farmers are cultivating. In total 6.67% of the respondents are cultivating vegetables. Rubber and turmeric are also cultivated by some of the respondents.



Major Crop-3

8.33% of the respondents cultivate Arecanut as the third major crop in the field as a source of generating revenue, and 1.67% of the respondents have Banana and coconut as the third major crop.



3.12 Details on Techniques used for Advanced Crop Production

None of the respondents are using advanced crop production methods.

3.13 Details on Financial Services

98.33% of the respondents utilize their own funds for cultivation and 10% of the respondents availed KCC for cultivation along with their own funds to meet the requirement for cultivation. 98.33% of the respondents are having a bank account.

3.14 Details on Marketing/ Selling of Agricultural Produce, Means of Transportation, Storage, Available Infrastructure

As per the data collected the following are the key understanding,

1. 80% of the respondents are selling the crop producer directly from the farm gate. All of them are selling to traders. None of the farmers sell their crop producer through the commission agent. Better prices and timely payment are the major reasons for them to sell to traders. The nearby market is around 2 to 10 km distance from their farm gate. The mode of payment is cash.
2. The respondents are also selling directly at the marketplace as there is a better price and timely payment. The respondents take the commodities in the 4-wheeler (1-2MT capacity).
3. The respondents store the produce in their own place.

3.15 Details on assistance under any Govt. of Kerala, Govt. of India Schemes

5% of the respondents have availed the assistance under any govt schemes.

3.16 Details on Field Level Awareness on FPC/FIG/Willingness for registered FPC Share, etc.

1. 100% of respondents have an understanding of the benefits of FPC/ FIG.
2. 100% of respondents are willing to provide share capital to the FPC.
3. 83.33% of the respondents are willing to sell the produce through FPC.
4. 100% of the respondents are willing to act on a Board of Directors.

3.17 Any Other Details

1. 16.67% of the respondents have registered under the AIMS portal of the Agriculture Department, Govt. of Kerala.
2. One of the respondents is registered under the KCC scheme.
3. None of the respondents have availed the technical/ management.
4. None of the respondents have installed the Karshika Vivara Sanketham app.
5. None of the respondents have installed the e-Vipani app.
6. None of the respondents have installed any mobile applications pertaining to crop advisory.

4. Key Findings and Conclusion

4.1 Key Findings or Observations

The key findings of the diagnostic study conducted in the Thrithala cluster of Palakkad district have been summarized in the table given below:

S. No.	Cluster Scenario (with respect to)	Key Findings/ Observations During the Diagnostic Study
1	Source of Income	83.33% of the farmers are practicing farming as a primary livelihood. 16.67% of the respondents are practicing livestock rearing as their secondary source of livelihood.
2	Annual Net Income	The average primary source of income of the respondents was Rs.1,07,111/per annum The average secondary source of income of the respondents was Rs. 50,000/annum.
3	Farmer Asset Details	83.3% of respondents are marginal (<2.5 acres) land holdings, 13.3% of respondents are small (2.5 to 5 acres) land holdings, 3.3 % of respondents are having semi-medium (5 to 10 acres) land holdings, 0% of respondents are having medium (10 to 25 acres) land holding, and none of the respondents are having large (>25 acres) land holding.
4	Equipment	31.67% of the farmers are owning pump-set. 1.67% of the farmers are owning power tillers. 1.67% of the farmers are owning micro irrigation.
5	Livestock	21.67% of the respondents are rearing cows. 1.67% of the respondents are rearing Goat. 1.67% of the respondents are rearing ducks. Out of the analysis, most of the farmers are rearing cows.
6	Irrigation	80% of the respondents are getting irrigation through a well. 35% of the respondents are getting irrigation through borewells. 18.33% of the respondents are getting irrigation through the pound. 10% of the respondents are getting irrigation through the river. 5% of the respondents are getting irrigation through the canal

		6. 1.67% of the respondents are also dependent on rainwater for irrigation.
7	Source of Input Purchase	Seeds 68.3% of the respondents are buying seeds from local traders and 10% of the respondents are buying seeds from Cooperatives and 65% of the respondents are buying seeds from FPC and KB. - The major crops they cultivate are Paddy, Coconut, and Vegetables. Fertilizer 31.67% of the farmers are sourcing fertilizer from local traders 3.33% of the respondents are buying seeds from Cooperatives 48.33% of the respondents are buying seeds from FPC and KB. Pesticides 35% of the farmers are sourcing from local traders and 70% of the respondents are buying seeds from Cooperatives, FPC, and KB.
8	Crop Detail	Coconut (68.33%), Paddy (25%) and Vegetables (6.67%) are the major crops -1
9	Financial Services	98.33% of the respondents utilize their own funds for cultivation and 10% of the respondents availed KCC for cultivation along with their own funds to meet the requirement for cultivation. 98.33% of the respondents are having a bank account.
10	Marketing	80% of the respondents are selling the crop producer directly from the farm gate. All of them are selling to traders. None of the farmers sell their crop producer through the commission agent. Better prices and timely payment are the major reasons for them to sell to traders. The nearby market is around 2 to 10 km distance from their farm gate. The mode of payment is cash. - The respondents are also selling directly at the marketplace as there is a better price and timely payment. The respondents take the commodities in the 4-wheeler (1-2MT capacity). The respondents store the produce in their own place.

11	Govt. of Kerala/ Govt. of India Farmer Assistance	5% of the respondents have availed the assistance under any govt schemes.
12	Field Level Awareness on FPC/FIG/Willingness for registered FPC Share	1. 100% of respondents have an understanding of the benefits of FPC/ FIG. 2. 100% of respondents are willing to provide share capital to the FPC. 3. 83.33% of the respondents are willing to sell the produce through FPC. 4. 100% of the respondents are willing to act as a Board of Directors.
13	Other details	1. 16.67% of the respondents have registered under the AIMS portal of the Agriculture Department, Govt. of Kerala. 2. One of the respondents is registered under the KCC scheme. 3. None of the respondents have availed the technical/ management. 4. None of the respondents have installed the Karshika Vivara Sanketham app. 5. None of the respondents have installed the e-Vipani app. 6. None of the respondents have installed any mobile applications on crop advisory.

4.2 Conclusion

The data for the diagnostic study was conducted in nine villages of, Thrithala block, Palakkad district. In total 60 respondents were interviewed. The farmers' dynamics are varying across different data points and some of them are similar. In terms of the crop, they cultivate Paddy, Coconut, and vegetables. Mixed cropping is one of the key bright spots observed in this region. Most of the farmers are arranged from their own funds. They sell the produce from the farm gate and take it to the marketplace as well.

It is observed that they understand the concept of FPC/ FIGs, and their advantages. Also, they are willing to pay the share capital and are very much interested to be the leader of the FPC. This shows the positive attitude of the farmers toward the collective entity.

4.3 Indicative Intervention

The Farmer Producer Company (FPC) promoted and formed in the cluster will look forward to addressing the issues related to production, harvesting, storage, and value addition/export-related facilities. The focus of FPC would be to reduce the cost of production, improve productivity, and access better market prices. Following are the proposed interventions through FPC promotion -

1. Coconut value chain business
2. Procurement centre
3. Value addition unit

12. Annexures

Annexure 1: Farmer stakeholders consulted

S.no	District	Village	Name of the Farmer	Mobile no.
1	Palakkad	Kappur	Abdul kadar	9645094184
2	Palakkad	Anakkara	Raveendra nath u.p	9249395611
3	Palakkad	Nagalassery	Abdul latheef	9947464373
4	Palakkad	Anakkara	Muhammad basheer	9746412517
5	Palakkad	Kappur	Raman	9895359490
6	Palakkad	Kappur	Aboobacker	9447084946
7	Palakkad	Nagalassery	Ukkukutty .km	8086152173
8	Palakkad	Anakkara	Sasheendran	9746310711
9	Palakkad	Anakkara	Saidalvi	9846667172
10	Palakkad	Nagalassery	Santhosh k.v	9744612985
11	Palakkad	Kappur	Pathmini	9745558339
12	Palakkad	Kappur	Abdul khadhar	9447242500
13	Palakkad	Kappur	Muhammad kutty	8157987360
14	Palakkad	Kappur	Sainudheen	8943033304
15	Palakkad	Kappur	Krishnan.k	9447436823
16	Palakkad	Kappur	Moiduhaji p.m	9946153718
17	Palakkad	Nagalassery	Chandrasekharan.vv	9447887157
18	Palakkad	Anakkara	Pv viswanathan	99466996301
19	Palakkad	Anakkara	Ibrahim kutty	9995545531
20	Palakkad	Anakkara	Hamza	9846185991
21	Palakkad	Anakkara	Abdul rasak	9746696089
22	Palakkad	Anakkara	Krishnan.pk	9645465814
23	Palakkad	Anakkara	Sidhik	9946909375
24	Palakkad	Anakkara	Muhammad riyas	9946127574
25	Palakkad	Kappur	Sidharthan	9847129150
26	Palakkad	Kappur	Radhakrishnan p.k	9744939375
27	Palakkad	Chalissery	Parameswaran	9645475555
28	Palakkad	Nagalassery	Chandran.a	8281163130
29	Palakkad	Kappur	Jayalakshmi	9496514307
30	Palakkad	Kappur	Muhammad tk	9048066285
31	Palakkad	Anakkara	Veeran kutty	9895115764
32	Palakkad	Anakkara	Raman	9895359490
33	Palakkad	Kappur	Muhammad kutty	8129225123
34	Palakkad	Nagalassery	Muraleedharan	9446790172
35	Palakkad	Thirumittacode	Sadhananthan	9400858619
36	Palakkad	Pattithara	Raman Namboothiri	9946835876
37	Palakkad	Thrithala	Narayanan. A	9946050997
38	Palakkad	Thrithala	Usha vt	9447944212
39	Palakkad	Kappur	Parameswaran p.p	9495009847
40	Palakkad	Pattithara	Aliyamu	
41	Palakkad	Thirumittacode	Yousaf	9846105010
42	Palakkad	Anakkara	Abdulla	7034743444

Diagnostic Study Report - Farmnet Agro Farmer Producer Company Ltd

43	Palakkad	Thrithala	Abdul salam	9446942539
44	Palakkad	Thrithala	Krishnan	9447944212
45	Palakkad	Nagalassery	Ahammad	9645827912
46	Palakkad	Nagalassery	Raghavan	9745259409
47	Palakkad	Nagalassery	Abdul latheef	9947464373
48	Palakkad	Nagalassery	Kumaran	9249804664
49	Palakkad	Nagalassery	Premalatha	9446456169
50	Palakkad	Nagalassery	Ramachandran	9539447963
51	Palakkad	Chalissery	Parameswaran	9645475555
52	Palakkad	Chalissery	Raman krishnan nambiar	9846437516
53	Palakkad	Chalissery	Simy	9539750717
54	Palakkad	Chalissery	Sulochana	9846284613
55	Palakkad	Chalissery	Kochubaby	9744925030
56	Palakkad	Chalissery	Balakrishnan	9747057223
57	Palakkad	Chalissery	Kalyani	9447323842
58	Palakkad	Nagalassery	Saradha	9946537060
59	Palakkad	Chalissery	Usephunni	7034695814
60	Palakkad	Chalissery	Muhammad ibrahim	7034888859

Annexure 2: Field Visit Photographs



Annexure 3: Diagnostic Survey Questionnaire



Diagnostic Survey Questionnaire

1. ABPA* _____
2. Date * _____
3. Survey Code * _____ 3. District * _____ 4. Panchayat _____
5. Block * _____ 6. Village * _____
7. Name of Interviewee * _____
8. Name of the father/Spouse* _____
9. Gender (M/F/T)* _____ 10. Caste *(SC/ ST/ OBC/MBC/BC/General) _____
11. Educational Qualification _____ 12. School/College _____
13. Mobile No. * _____ 14. Email _____
15. PAN No.* _____ 16. Aadhar No.* _____
17. No. of family members * _____ 18. No. of Children ____M____F____

19. Source of livelihood

a) Primary Source

- ☐ Agriculture farming
 ☐ Agriculture Labour
 ☐ Livestock (Cow, Buffalo, Goat, Poultry)
 ☐ Business
 ☐ Private job
 ☐ Govt. Job
 ☐ Other: _____

b) Secondary Source

- ☐ Agriculture farming
 ☐ Agriculture Labour
 ☐ Livestock (Cow, Buffalo, Goat, Poultry)
 ☐ Business
 ☐ Private job
 ☐ Govt. Job
 ☐ Other: _____

20. Annual Net income *(in Rs)

- (a) Primary source _____ (b) Secondary source _____

21. Annual Expenditure*(in Rs)

- (a) Rent _____ (b) Medicine _____ (c) Electricity _____ (d) Food _____
 (e) Education _____ (e) Entertainment _____ (f) Others _____

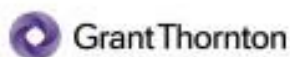
22. Farmer asset details

(a) Type of House *

- ☐ Kaccha
 ☐ Pakka

(b) Own means of transport *

- ☐ Bicycle
 ☐ 2- Wheeler
 ☐ 3- Wheeler
☐ 4- Wheeler
 ☐ None
 ☐ Other: _____



(c) Availability of electricity *

☐ Yes☐ No

(d) Availability of Mobile Phone

☐ Smart phone☐ Normal phone☐ No Phone

23. Total Other Loan if any (as on date apart from Agriculture) * _____

24. Total Saving (as on date) * _____

25. Agriculture Land details

Agriculture Land Description on the basis of operational landholding *

- i. Marginal (<2.5 acres) _____
- ii. Small (2.5 acres – 5 acres) _____
- iii. Semi medium (5 acres – 10 acres) _____
- iv. Medium (10 acres – 25 acres) _____
- v. Large (>25 acres) _____

26. Land details (in acre) *

Particulars	Yes/No	Area (in acre)	Area under cultivation	Irrigated area	Rain fed area	Other – Barren or fallow land
a) Own land details						
b) Land taken on lease						
c) Land given on lease						

27. Farm equipment details

Own farm equipment *

- ☐ Land Levelling equipment's ☐ Power Tillers ☐ Harvesting machine ☐ weeding equipment
☐ Pump-set (Submersible Diesel/Kerosene) ☐ Micro Irrigation (Drip, Sprinkler)
☐ Tractor ☐ Other (Seed Drill, Thresher, Cultivator, etc.) ☐ None

28 Have you availed any subsidy for buying farm equipment? *(Y/N) _____

If yes, name the farm equipment _____

29. Name the scheme under which you avail subsidy for buying farm equipment

- _____
- (a) Land Levelling equipment's (estimated value) _____
 - (b) Power Tillers (estimated value) _____
 - (c) Harvesting Machine (estimated value) _____
 - (d) Weeding Equipment (estimated value) _____
 - (e) Pump-set – electricity/Diesel(estimated value) _____
 - (f) Micro Irrigation (Drip, Sprinkler) _____



(g) Tractor

(h) Other- Seed Drill, Thresher, Cultivator, etc. (estimated value)

30. Livestock☐ Ox(en)☐ Buffalo(es)☐ Cow(s)☐ Goat(s)☐ Poultry☐ Other _____**31. Irrigation details**

Source of irrigation *

☐ River☐ Canal☐ Dam☐ Pond☐ Well☐ Bore well☐ Rain water☐ Other**32. Source of Input Purchase**

Input Suppliers	Seeds	Fertilizer	Pesticides
Local Traders			
Distributors			
Directly from Company			
Cooperatives/ FPCs			
Others			

i. Major Crops – Crop 1

a) Name of crop _____

b) Season

☐ Kharif☐ Rabi☐ Zaid☐ Perennial

c) Area under cultivation (in acre) * _____

d) Total production (in quintal) * _____

e) Productivity (in quintal/acre) * _____

f) Mode of irrigation

☐ Drip☐ Sprinkler☐ Flood☐ Other _____

g) Total cost of production – including Agri inputs, hired labour, Irrigation, harvesting, etc. (Rs./acre)

h) Net Income (Total Income- Total cost of Production) (Rs./acre) _____

ii. Major Crops – Crop 2

a) Name of crop _____

b) Seasons

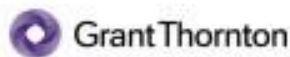
☐ Kharif☐ Rabi☐ Zaid☐ Perennial

c) Area under cultivation (in acre) _____

d) Total production (in quintal) _____

e) Productivity (in quintal/acre) _____

f) Mode of irrigation



☐ Drip ☐ Sprinkler ☐ Flood ☐ Other: _____

g) Total cost of production (Rs./acre) _____

h) Income (Rs./acre) _____

iii. Major Crops - Crop 3

a) Name of crop _____

b) Seasons

☐ Kharif ☐ Rabi ☐ Zaid ☐ Perennial

c) Area under cultivation (in acre) _____

d) Total Production (in quintal) _____

e) Productivity (in quintal/acre) _____

f) Mode of irrigation

☐ Drip ☐ Sprinkler ☐ Flood ☐ Other: _____

g) Total cost of production (Rs./acre) _____

h) Income (Rs./acre) _____

iv. Major Crops - Crop 4

a) Name of crop _____

b) Seasons

☐ Kharif ☐ Rabi ☐ Zaid ☐ Perennial

c) Area under cultivation (in acre) _____

d) Total production (in quintal) _____

e) Productivity (in quintal/acre) _____

f) Mode of irrigation

☐ Drip ☐ Sprinkler ☐ Flood ☐ Other: _____

g) Total cost of production (Rs. /acre) _____

h) Income (Rs. / acre) _____

v. Major Crops – Crop 5

a) Name of Crop _____

b) Season

☐ Kharif ☐ Rabi ☐ Zaid ☐ Perennial

c) Area under cultivation (in acre) _____

d) Total Production (in quintal) _____

e) Productivity (in quintal) _____

f) Mode of irrigation

☐ Drip ☐ Sprinkler ☐ Flood ☐ Other: _____

g) Total cost of Production (Rs./ Acre) _____

h) Income (Rs. / acre) _____

33. Modern Techniques used for advanced Crop production

Modern Techniques used

☐ Green House ☐ Poly House ☐ Shed Net ☐ None

I. Area under Green house (in Sq.Mtr.) * _____

II. Area under Poly House (in Sq.Mtr.) * _____

III. Area under Shed Net (in Sq.Mtr.) * _____

IV. Name the crop grown in Green House/ Poly House/ Shed Net *

1. _____

2. _____

3. _____

4. _____

34. Financial Services

a) Sources of finance for agriculture *

☐ Own ☐ Banks (KCC/others) ☐ Private Money Lender ☐ Traders

☐ Relatives ☐ SHGs ☐ MFIs ☐ Other

b) If taken loan from traders/ Private Money lenders what is the rate of interest per annum? (in percentage) * _____

c) Loan Repayment Period to traders/ Private Money Lenders (in months) * _____

d) Do you have a bank account? *(Y/N) _____

e) Are you member of /any cooperative society /JLGs/ Farmers Clubs * (Y/N) _____

If yes name of cooperative society / JLGs/ Farmers Clubs * _____

f) Do you have personal Insurance Policy? *(Y/N) _____

g) Have you taken crop insurance? *(Y/N) _____

If yes, specify for which crop: _____

h) Name the crop insurance scheme and the Insurance Company Name

35. Marketing Details

a) Do you sell your produce from you farm place directly? (Y/N) _____

If yes, who are the buyers?

☐ Businessman ☐ Traders ☐ Wholesaler ☐ Retailer

☐ Cooperatives/ FPCs ☐ Other: _____

b) Do you sell your crop through commission Agent? *(Y/N) _____

If yes, what is the commission of commission Agent (in percentage)? _____

Particulars	Crop 1 *	Crop 2	Crop 3	Crop 4	Crop 5
(a) Name of produce sold from farm point					
(b) Quantity (In Quintal)					

(c) Recent Selling Price (Rs./Kg)					
-----------------------------------	--	--	--	--	--

c) Why do you prefer selling at farm point rather than going to sell in market?

- ☐ Better price ☐ Timely payment ☐ Unavailability of market ☐ Distant market
☐ Other _____

d) Mode of payment by the businessperson:

- ☐ Cash ☐ Advance ☐ Monthly ☐ Other: _____

If credit, what is the payment schedule?

- ☐ Weekly ☐ Fortnightly ☐ Monthly ☐ Other: _____

e) Mode of payment by the trader

- ☐ Cash ☐ Advance ☐ Credit ☐ Other: _____

If credit, what is the payment schedule?

- ☐ Weekly ☐ Fortnightly ☐ Monthly ☐ Other: _____

f) Mode of payment by the Commission Agent:

- ☐ Cash ☐ Advance ☐ Credit ☐ Other: _____

If credit, what is the payment schedule?

- ☐ Weekly ☐ Fortnightly ☐ Monthly ☐ Other: _____

g) Mode of payment by the wholesalers:

- ☐ Cash ☐ Advance ☐ Credit ☐ Other: _____

If credit, what is the payment schedule?

- ☐ Weekly ☐ Fortnightly ☐ Monthly ☐ Other: _____

h) Mode of payment by the retailer

- ☐ Cash ☐ Advance ☐ Credit ☐ Other: _____

If credit, what is the payment schedule?

- ☐ Weekly ☐ Fortnightly ☐ Monthly ☐ Other: _____

i) Mode of payment by the Cooperatives/ FPCs:

- ☐ Cash ☐ Advance ☐ Credit ☐ Other: _____

If credit, what is the payment schedule?

- ☐ Weekly ☐ Fortnightly ☐ Monthly ☐ Other: _____

36 Do you sell your produce from your farm place to market? (Y/N) _____

a) Name of the nearby consumer market and its distance from your farm (in kms) _____

b) Name of the nearby VFPC market and its distance from your farm (in kms) _____

c) Name of any other nearby other markets and its distance from your farm (in Kms) _____

d) Whom do you sell the produce in the other markets?

- ☐ APMC traders ☐ Processors ☐ Others: _____

e) Whom do you sell the produce in the consumer market/ Retail Market?

- ☐ Wholesalers ☐ Retailers ☐ VFPC ☐ Processors

☐ Others _____

Particulars	Crop 1 *	Crop 2	Crop 3	Crop 4	Crop 5
(a) Name of the produce sold in the market					
(b) Quantity (In Quintal)					
(c) Recent Selling Price (Rs./Kg)					

37. Why do you prefer selling in the market rather than at farm point?*

- ☐ Better price ☐ Timely payment ☐ Easy accessibility ☐ Multiple buyer availability
☐ None ☐ Other

38. What type of means of transportation do you use for taking the produce to the market place?*

- ☐ 2 wheeler ☐ 3 wheeler ☐ 4 wheeler (1-2MT) ☐ 4 wheeler (>5MT)
☐ None ☐ Other:_____

Cost of transportation (Rs/ ton/ trip to market) _____

39. Where do you store your commodity?

- ☐ Warehouse ☐ Cold storage ☐ Own place ☐ None
☐ Other:_____

40. Name the warehouse/ cold storage you use and its distance from the farm (in kms) _____

What is the Charges for storage (Rs. ton/ month) _____

41. Have you availed the facility of Pradhan Mantri Jan Dhan Yojana? (Y/N)_____

42. Are you registered under AIMS portal of Agricultural Department, Govt. of Kerala? (Y/N)_____

43. Are you registered under KCC scheme? (Y/N)_____

44. Have you availed assistance under any other Govt. of India/Govt. of Kerala scheme? If Yes, Please elaborate _____

45. Have you availed of any formal technical / management training? (Y/N)_____

If yes, from where:

Total no. of days attended:

Topics covered under the training program: _____

46. Do you know about the benefits of FPC/FIG?

47. Are you willing to become a member of FPC and contribute INR 2000 as shareholding amount? (Y/N)_____

If No, Please specify the reason-

48. Do you have interest to act as one of Board of director of the FPC? Y/N)_____

49. Are you willing to sell your produce through FPC? (Y/N)_____

50. Have you installed Karshika Vivara Sanketham app on your mobile and using the same? (Y/N)_____

51. Have you installed e-Vipani app on your mobile and using the same? (Y/N)_____

52. Have you installed any mobile applications pertaining to crop advisory? (Y/N)_____

If Yes, Please specify _____

Name of the interviewer

Sign of the interviewer: