Working Paper Series No.6

Government of Kerala

Integrated Agriculture Development Project in Nadathara Grama Panchayat, Thrissur

Evaluation Division
Kerala State Planning Board
November 2012

Abstract

Decentralized planning for agriculture and allied sector is essential as the local resources, climate and agro-ecological features dictate success or failure of any intervention. Local level planning therefore helps to arrive at an integrated, participatory and co-coordinated initiative for development of a sub-state geographical area.

Nadathara Grama Panchayat has occupied its own place among other panchayats in Thrissur district due to its share to the agriculture sector. An integrated agriculture development plan is continuously implemented in the panchayat for the last years mainly focusing on the development of four major crops such as paddy, banana, coconut and vegetables.

Hence the major objectives of the present study as well as the project were to increase the production and productivity of paddy, coconut, banana and vegetables and promote mechanisation process in agriculture.

In order to analyse the production, productivity and area of cultivation of the major crops of the years 2009-2012, both primary as well as secondary data were used. Primary data were collected from conveniently selected 30 beneficiaries of integrated agriculture plan in Nadathara grama panchayat. Secondary data were collected from the Taluk Statistical Office Thrissur, Department of Agriculture Thrissur, and Land Use Board.

Disclaimer

This working paper has been prepared by Smt. Nithya T.V, Research Assistant, District Planning Office, Thrissur. The facts and figures in the report are based on quick field survey done by the author and do not reflect the views or polices of Kerala State Planning Board. The purpose of this document is to provide a comprehensive overview of the scheme/projects implemented by Local Self Government during XI Five Year Plan.

Major Findings

If we analyse the general characteristics of the panchayat we can see that, major occupation of the people in Nadathara panchayat is agriculture. More than 50 per cent of the people are engaged in agriculture and allied activities. Major cultivated crops in Nadathara panchayat are vegetable crops. coconut, areca nut, banana, pepper etc also contributes to total production. About 40 per cent of the plan fund had been earmarked for the productive sector. Of the total fund allocated, major share of fund allocation was towards banana cultivation followed by paddy. Share to vegetable promotion was very low but drastic change in the allocation towards vegetable promotion was noticed during the year 2011-12 only.

From the analysis of secondary data we can see that area under cultivation of Paddy is showing a decreasing trend over the years. Total number of coconut palms and the area under cultivation of banana and other plantains shows an increasing trend over the years. Total area of cultivation of vegetables in panchayat has show a positive trend over the years though the drastic change was noticed during 2011-12. Production and productivity of almost all crops has increased including that of vegetables but the rate of growth is low.

From the analysis of occupational characteristics of the respondents from the primary data it is clear that large number of beneficiaries is traditional agricultural labours and landholdings are small limiting the scope for large scale cultivation. Most of the cultivators have lands below one acre and only six families have taken land on lease for cultivation.

Almost all respondents had accessibility to electrified irrigation facilities on drilled wells. Majority of the farmers cultivated banana plants above 200. Large scale cultivation of coconut trees is for five farmers only. Only eleven families were engaged in paddy cultivation in which area under cultivation is also very low. Uses of High Yielding Variety seeds are very low and they mainly use traditional seeds. Organic fertilizers are mainly used. Unavailability of labours has complained by some beneficiaries.

From the analysis of above data it is clear that products are distributed through agents and authorized dealers both of them are almost equal. So we cannot ensure better prizes to the farmers. Agricultural implements are very short compared to its demand

Major Problems Faced by the Farmers

Lack of proper awareness as well as knowledge about the ongoing schemes, lack of irrigation facilities and marketing facilities, increased role of agents, increasing prices of land on lease, price fluctuations, occurrence of disease etc. are the major problems faced by the farmers.

Prospects for Improvement

The possibility of paddy cultivation in uplands has to be explored. An effective system for pest and disease surveillance and monitoring has to be placed at the earliest. There is abundant scope for product diversification. Another major area to be stressed is the extension of irrigation facilities. Banana and vegetable cultivation have to be streamlined with a view on export. Cool season vegetables have a scope during the October – January season. Coconut is the major plantation crop and the disease affected palms has to be located and replaced by healthy seedlings. Inter cropping has to be promoted in coconut gardens as a source of additional income. Production and productivity can be enhanced by introducing group management in coconut at the ward levels. Group farming approach has to be promoted in paddy cultivation. An attractive subsidy has to be given to the farmers. People's participation has to be ensured at each and every stage of development. A number of seminars/working groups has to be convened to the group farming societies and committees. Use of organic manures and energy conservational practices has to be promoted.

Introduction

Agriculture sector is vital for the food and nutritional security of the nation. The sector remains the principal source of livelihood for more than 58 per cent of the population though its contribution to the national GDP has declined to 14.2 per cent due to high growth experienced in industries and service sectors. Compared to other countries, India faces greater challenge. Since with only 2.3 per cent share in world's total land area, it has to ensure food security of the population which is about 17.5 per cent of world population. This leads to excessive pressure on land and fragmentation of land holdings.

Increasing agriculture production with limited natural resources in a sustainable manner for ensuring food and nutritional security and providing income security to farmers are the major challenges before the government.

Decentralised planning is an approach to balanced development and reduction of regional disparities emerged well or before independence. Participatory development plans attempted at with a bottom up approach has yielded better results in terms of reduction of social and gender disparities, judicious distribution and use of resources, equal development opportunities to all as against the top down approach to planning.

Decentralized planning for agriculture and allied sector is essential as the local resources, climate and agro-ecological features dictate success or failure of any intervention. Local level planning therefore helps to arrive at an integrated, participatory and co-ordinated initiative for development of a sub-state geographical area.

A discernible trend in all the tiers of LSGs in the priority given to the revival of agriculture and allied sectors that include paddy cultivation, animal husbandry, dairy development, fisheries etc. Out of the total plan fund made available to the productive sector by LSGs as much as 65.48 per cent had been

earmarked for the implementation of various schemes under agriculture and allied sectors. In fact LSGs had given more weightage to the cultivation of paddy and other food crops of the total fund earmarked for agriculture and allied sectors, paddy and other food crops alone accounted for 51 per cent in 2009-10. There was a significant increase in allotment during 2008-09 and 2009-10 as the state was facing food security problems.

Kerala has embarked on decimalization and restructuring of local self government by launching the 9th plan as people's plan. The Panchayat Raj Institutions (PRT) empowered under the Panchayat Raj Act, 1994, was allocated about 35-45 per cent of the state's annual plan fund of the state and was given freedom to formulate and implements their own development programmes.

Kerala Agriculture

Agriculture and allied sectors are the most important sectors of Kerala economy as they provide livelihood to about 2/3rd of the population and contribute about 10 per cent of the real SDP in 2008-09. According to 2001 Population Census, 24 per cent families in Kerala are depending directly on agriculture. The tools and implements used by the farmers are primitive, crude and antiquated, as compared to the most up-to-data form of machinery used by the farmers of the west. The mechanization of agriculture has brought about increased agricultural productivity and reduction of cost.

Credit of finance to vast majority of needy agriculturist is imperative and they are forced to depend on money lenders. So financial support to the farmers are necessary.

The total geographical area of the state is 38.86 lakh ha, which represents only 1.18 per cent of the total area of the country. The total cropped area in 2008-09 was 27.02 lakh ha. Out of this the food crops occupy only 12.05 per cent. For

meeting the food requirements, the state heavily depends on import from other states.

Major Crops in Trissur District

a) Paddy

Paddy cultivation is by far the largest agricultural practice pursued by a major section of the people. It has also got a lot of ecological significance. About 30928.53 ha of area are under paddy cultivation. The average productivity is 3.47 tonnes/ha. Among the 3 seasons of cultivation, Virippu starts from April-May and major producers of Virippu are Pazhayannur and Wadakkanchery Blocks followed by Ollukkara. Virippu crop is solely dependent on rains for irrigation and is carried out in wet lands with facilities for controlling excess water. The changes in rainfall pattern affect Virippu crops in many ways. Summer crop is otherwise called Puncha and major producers of Puncha crops are Cherpu, Chowannur, Mullassery, Puzhakkal, Vellangallur, Irinjalakuda and Anthilkad Block Areas. 56 ha of non Kole Paddy Puncha crop has almost vanished in Ollukkara Block during the period 2007-08. Mundakan crops are the main production in the district. The kole lands are dewatered and cultivation starts in September. The major regions of Karabhoomi taking up Mundakan cultivation are Pazhayannur, Wadakkanchery, Ollukkara and Mala Blocks.

b) Coconut

Thrissur district contributes in of both area and production of coconut in Kerala and is well ahead of neighbors Palakkad and Ernakulam. The reduction in area under paddy had led to the expansion of area under coconut. The productivity of coconut is almost steady around 7000/nuts/ha/year. Due to the prevalence of root (wilt) disease, especially in the southern area the productivity of coconut has decreased. Earnest efforts are being made to identify the disease affected palms and to remove them and subsequently, replant with good healthy seedlings. In

spite of the stagnation in productivity, the total production is showing an increasing trend, due to increasing area and better management practice adopted.

As the crop is relatively labour intensive and ensure a long term steady yield without much effort, more and more farmers are coming forward to replace the existing unproductive and senile palms with healthy high yielding varieties. This will tell upon the production in the coming years.

c) Banana

Even though Banana production is about 5 per cent of the state production, it is a very important crop in the district, Nendra is the prominent variety of banana is the favourite in this area. A lot of converted paddy lands are now used for the cultivation of banana plants. In areas of assured irrigation, it is a very lucrative crop. Chengalikoodan variety of banana fetches maximum prices as it is usually produces as kaazhchakula and its cultivation is mainly concentrated in eastern grama panchayat.

d) Vegetables

Vegetables are essential food supplements for livelihood. But we are heavily dependent on other states for our daily vegetable requirements. There is ample scope for this crop in our district. Cultivation can be taken upon smaller scales in every home stead. If a family is able to meet its requirement from its own back yard, the savings on food expenditure will be remarkable. This also ensures the availability of safer food materials. This in turn will protect us from the harmful effects of chemicals that are indiscriminately used in commercial cultivation of vegetables.

An increasing trend in area as well as production is noticed for vegetables. The area has almost doubled from 1231 ha in 1985 to 2429 ha now. The production also has shown a remarkable increase from 17375 tonnes to 40634 tonnes. Vegetable cultivation is mainly concentrated in the eastern parts

of the district. Commercial cultivation is seen in Pazhayannur block and also in Pananchery, Nadathra, Puthur and Mattuthur grama panchayats.

Although there are other major crops cultivated such has rubber, arecanut, pepper, nutmeg etc the above said four major crops are selected for the present study.

Nadathara Grama Panchayat

Nadathara Grama Panchayat has occupied its own place among the other panchayats due to its share to the agriculture sector and the major occupation of the people is agriculture. Total number of households to whom major occupation is agriculture will come about 6372. Total land area of the panchayat is 1930.64 ha in which 1492 ha of land is utilized for agricultural activities. 164.04 ha of land is paddy fields and 626.16 ha of land is cultivated for mixed crops. Total area used for rubber cultivation is 104 ha. 117.52 ha of land is utilized for coconut production and 97.96 ha of land is utilized for banana production.

Formation of self help groups under Kudumbashree units has led to a great uplift to the agriculture development of panchayat. Water shed master plan has implemented success fully as the agriculture is mainly depending on rain water, and water source from Peechi Dam, Manalipuzha and Valathukara Canal.

An Integrated Agriculture Development plan is continuously implemented in the Panchayat for the last 3 years. Formation of about 23 self help groups under Kudumbashree and the promotion of Pattakrishi through Krishibhavan, about 18.32 ha of fallow lands have converted to cultivable lands.

a) Paddy

According to 1997 data the total paddy fields in the panchayat was 286.4 ha which reduced to 72.63Ha in 2006. But

it has increased to 108 ha in 2008. With the combined effort of Nadathara Krishibhavan & panchayat 20.3 ha at land has converted to cultivable paddy fields. Panchayat is giving subsidized seeds fertilizers and agricultural implements for the promotion of Paddy cultivation.

b) Coconut

Total coconut tree in panchayat area is calculated to about 70000 the wilt disease has spread during the last of 90's which led to reduction in total coconut production. To overcome the problem about 50 per cent subsidized fertilizers and implements have given to 25000 coconut trees for the last 5 years.

c) Banana

Total area cultivated for Nendra (Banana Variety) production comes about 80 ha. And for the last 5 years subsidized fertilizers and implements are allotting to about 20000 plants.

d) Vegetable

Many more people in Panchayat have been attracted to the production of vegetables. Major changes in all other crops noticed in the production of vegetables. Cabbage and coli flower have also experimented in panchayat and attained good results. Inspite of this, infrastructural facilities are essential for the success of any activity farm machineries such as tractors, power tillers, harvesters are essential for crop production as labour availability is not enough to meet the demand. Provisions has made in the allocation of plan fund towards the supply of agricultural implements during the last years.

Statement of the problem

Total paddy fields are decreasing in all over the states including Nadathara grama panchayat. Increased cost of

production as well as the unavailability of the agricultural labourers has accelerated the problem. Land filling and conversion has resulted in the splitting of land and reduced the scope for group faming. Use of hybrid seeds and the supply of agricultural implements to a great extent will help to reduce the cost of production.

Common people are not aware of the keeping at coconut which leads to the reduction of coconut production. Inspite of all, the fluctuation of the price has also accelerated the problem. Subsidized fertilizers will help to concentrates on production and increase the same.

Nadathara has it's own place in banana production. About 100000 bananas are cultivated in panchayat area. Increasing cost of production is the major problem. Subsidized agricultural implements will help to reduce the problem to a great extent.

Vegetable production is concentrated in eastern side of the panchayat and many young cultivators are attracted to the area. Production for commercial purposes has also to be promoted.

Unavailability of agricultural labourers and increased labour cost are one of the major problems which can be reduced to a great extent by mechanization. Subsidized agricultural implements have to be made to reduce the cost of production and promote agriculture.

From the above circumstances, it is clear that the area of cultivation and total production has to be accelerated and mechanization has to be brought about to reduce the cost of production of major crops in panchayat area.

An Integrated Agriculture Development plan is continuously implemented in the panchayat for the last 3 years. Formation of about 23 self help groups under Kudumbasree and

the promotion of pattakrishi through Krishibhavan, about 18.32 ha of fallow lands have converted to cultivable lands.

Project Profile

Decentralized planning is an approach to balanced development and reduction of regional disparities emerged well or before independence. Participatory development plans attempted at with a bottom up approach has yielded better results in terms of reduction of social and gender disparities, judicious distribution and use of resources, equal development opportunities to all as against the top down approach to planning.

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1930.64 ha in which 1492 ha of land is utilized for agricultural activities 164.04 ha of land is paddy fields and 626.16 ha of land is cultivated for mixed crops total area used for rubber cultivation is 104 ha. 117.52 ha of land are utilized for coconut production and 97.96 ha of land is utilized for banana production.

Total paddy fields are decreasing in all over the states including Nadathara grama panchayat. Low rate of production is the major reason. Increased cost of production as well as the unavailability of the agricultural labourers has accelerated the problem. Use of hybrid seeds and the supply of agricultural implements to a great extent will help to reduce the cost of production.

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Vegetable production is concentrated in eastern side of the panchayat and many young cultivators are attracted to the area. Production for commercial purposes has also to be promoted.

An Integrated Agriculture Development plan is continuously implemented in the panchayat for the last years mainly focusing on the development of four major crops such as paddy, banana, coconut and vegetables.

Hence the major objectives of the study are:

Objectives

1. To analyse the production and productivity of paddy
2. To analyse the production and productivity of coconut
3. To analyse the production and productivity of banana
4. To analyse the production and productivity of vegetables
5. To analyse the promotion of mechanization

Methodology

In order to analyse the production and area of cultivation of the major crops of the years 2009-2012, both primary as well as secondary data were used. Primary data were collected conveniently from selected 30 beneficiaries of Integrated Agriculture Project in Nadathara grama panchayat. Secondary data were collected from the Taluk Statistical Office, Thrissur, Department of Agriculture, Thrissur and Land Use Board.

For data analysis, statistical methods such as simple, multiple bar diagrams, trend line, (linear), percentages etc. are used.

Limitation of the Study

Small sample size is the obvious limitation necessitating caution in the interpretation of the data. The constraints have been too numerous to merit for a bigger study. Therefore, if the present study deviates from the actual empirical fact, it may be due to the small sample size, so it may not be appropriate to make any absolute projections from this project report.

Analysis and Interpretation

Nadathara Panchayat includes in the Ollukkara Block of Thrissur district. Total area comes to 20.91 km^2 which came into existence in 1961. Geographically Nadathara panchayat comes in the Edanadu region. Topologically panchayat can be divided

into mountains, hill slopes and plateaus. Main agricultural crops in the panchayat are paddy, coconut, banana, arecanut, rubber, pepper, nutmug, vegetables etc. In the eastern side we can see laterite soil, rocks and red loam. In the middle and paddy fields we can see red loam. Rubber is cultivated in the slope regions and mixed crops are cultivated in plateaus.

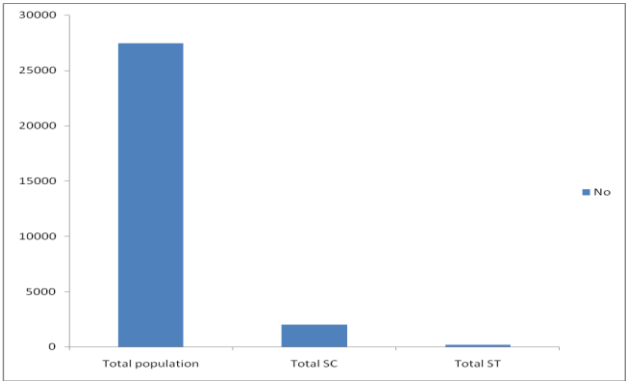
Nadathara-Eravimangalam Canal, Pattalakkunnu Kozhukkulli canal etc are major irrigation schemes.

Table 3.1
Population Characteristics of Nadathara Grama Panchayat

Sl.No.	Particulars	No. of People
1	Total population	27459
2	Total SC	2007
3	Total ST	187
4	Total Literate	22285

Source: 2001 Census Report

Figure 3.1
Population Characteristics of Nadathara Grama Panchayat



Occupational Structure

Major occupation of the people in Nadathara panchayat is agriculture. More than 50 per cent of the people are engaged in agriculture and allied activities. Another major occupation is tread rubber industry. Total number of households to whom major occupation is agriculture will come about 6372.

Table 3.2
Population: Total Workers, Main Workers and Main Cultivators

Sl.No.	Type	M	F	T
1	Total workers	7512	2865	10377
2	Main workers	6606	2259	8865
3	Main cultivators	393	89	482

Source: Panchayat level Statistics 2006, Trissur.

Table 3.3
Concentration index of workers, Nadathara

Sl.No.	Type	index
1	Agriculture labourers	0.664
2	Household Industrial workers	0.643
3	Cultivators	1.017
4	Other workers	1.071

Source:IDDP Report Thrissur Volume 1

Land Utilization Pattern

Major cultivated crops in Nadathara Panchayat are vegetable crops. Coconut, areca nut, banana, pepper etc also contributes to total production. Recently many more paddy fields have converted for commercial purposes. Total area used for

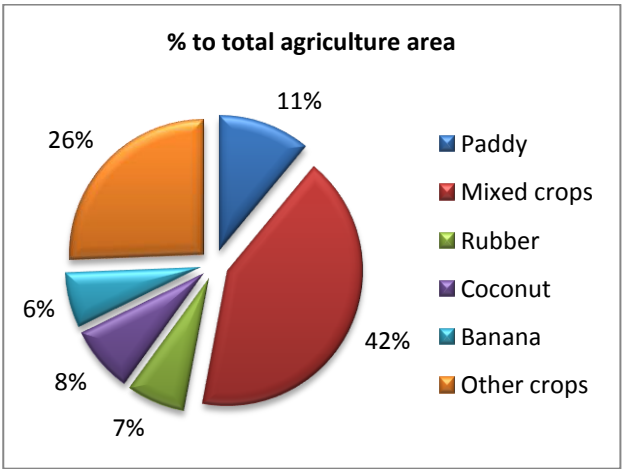
cultivation in the panchayat is 1492 ha. Details are given as follows.

Table 3.4
Crop-wise Cultivation Area

Sl.No.	Variety	Area under different Crops (In ha)	% to Total Agriculture
1	Paddy	164.04	10.99
2	Mixed crops	626.16	41.97
3	Rubber	104	6.97
4	Coconut	117.52	7.88
5	Banana	97.96	6.57
6	Other crops	382.32	25.62

Source: Vikasana Rekha 2011, Nadathara G.P.

Figure 3.2



Crop-wise Cultivation Area

As per the land use analysis Nadathara comes in the agricultural zone in which concentration index is greater than one.

Table 3.5
Concentration Indices of Various Land Use

Sl.No.	Type	Concentration index
1	CI of forest	0.01
2	CI of agriculture	1.34
3	CI of plantation	1.47
4	CI of non agriculture	0.35

Source: Agriculture statistics 2006, Tsr. Dt. Panchayat level

Integrated Agriculture Development Plan

Integrated agriculture development programme has been implemented in Nadathara panchayat from 2009-10 to 2011-12. About 40 per cent of the plan fund in peoples plan had been earmarked for the productive sector. The total outlay of funds for integrated agriculture development plan from 2009-10 to 2011-2012 given as follows.

Table 3.6
Year-wise Allocation and Expenditure of Plan Fund to the Project

Sl.No.	Year	Total Fund Allotted	Total
1	2009-10	3128800	3128249
2	2010-11	926000	816405
3	2011-12	4000000	4000000

Source: Report, Nadathara Krishibhavan

Figure 3.3
Total Plan Fund and Expenditure

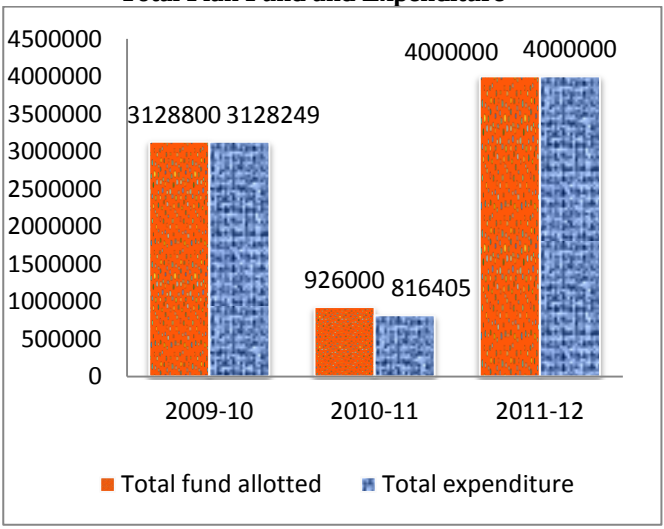


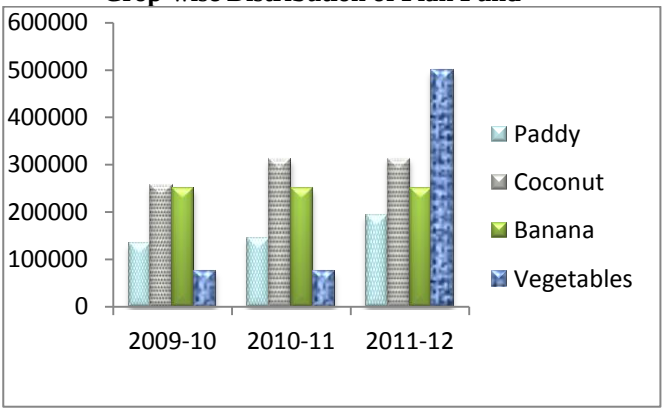
Table 3.7
Crop Wise Classification of Plan Fund
(2009-10 to 2011-12)

Sl. No.	Year	Paddy	Coconut	Banana	Vegetable
1	2009-10	134000	256000	250000	75000
2	2010-11	144000	312000	250000	75000
3	2011-12	192600	312800	250000	500000

Source: Report, Nadathara Krishibhavan

Of the total fund allocated, major share of fund allocation was towards banana cultivation followed by paddy. Share to vegetable promotion was very low but drastic change in the allocation towards vegetable promotion was noticed during the year 2011-12 only.

Figure 3.4
Crop-wise Distribution of Plan Fund



Allocation of Plan Fund towards Mechanisation

Use of primitive agricultural implements as well as the unavailability of labourers has increased agricultural cost of production many times. To over the same mechanization the only solution by the supply of agricultural implements plan funds allocation for mechanization for the concerned years given as follows.

Table 3.8
Allocation of Plan Fund for Agricultural Machineries

Sl.No	Year	Fund Allotted
1	2009-10	70000
2	2010-11	85000
3	2011-12	165000

Source: Report Nadathara Krishibhavan

Pump sets, sprayers, weed cutters, coconut climbers etc are the subsidized machineries distributed to the cultivators.

From the analysis of the above data, it is clear that total fund allocated for machineries has increased over the years. It has helped to reduce the cost of production to a great extent as well as time saving too.

Paddy

Paddy is the major food crop for the people in Kerala. The consumption of rice in the state is increasing day by day but the area of cultivation of paddy is gradually decreasing over the years.

Area under Paddy Cultivation

The area under paddy cultivation has decreased over the years (2009-10-11-12) among the total enumerated area of 51966 cents.

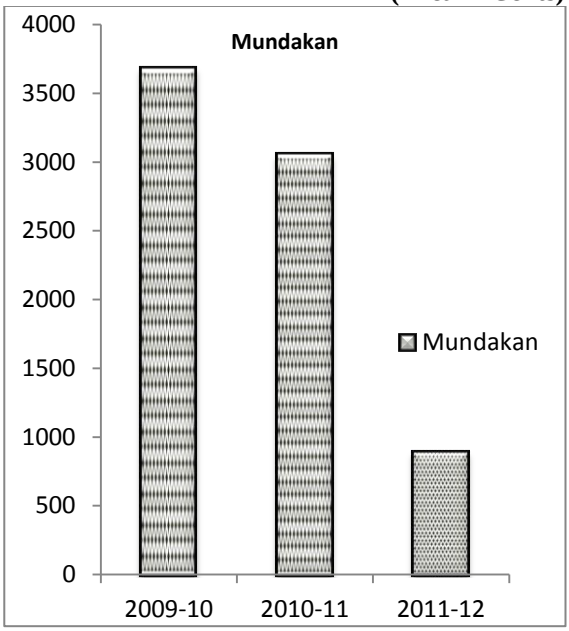
Table 3.9
Area under Paddy Cultivation (2009-10 to 2011-12)
(Area in Cents)

Sl.No	Year	Mundakan	Total
1	2009-10	3678	3678
2	2010-11	3050	3050
3	2011-12	887	887

Source: Sample survey report, Taluk Statistical Office, Thrissur

Figure 3.5
Area under paddy cultivation
(2009-10 to 2011-12)

(Area in Cents)

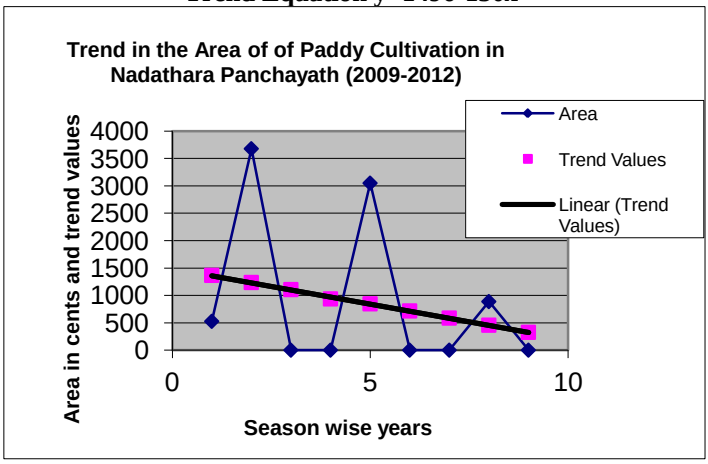


As far as the sample survey report concerned, during 2009-10 we can see active paddy cultivation. First season virippu is solely dependent on rains for irrigation and is carried out in wet lands with facilities for controlling excess water. The changes in rainfall pattern affect virippu crop in many ways. When the summer showers are not received in sufficient quantities farmers are not able for raise their crop during April-May which delays the harvest.

Table 3.10
Area under Paddy Cultivation (2009-10 to 2011-12)
Trend Equation y=1496-130x

Sl.No.	Season wise year	Area	Value of x	Trend value
1	2009-10 Virippu	526	1	1366
2	2009-10 Mundakan	3678	2	1236
3	2009-10 Puncha	0	3	1106
4	2010-11 Virippu	0	4	936
5	2010-11 Mundakan	3050	5	846
6	2010-11 Puncha	0	6	716
7	2011-12 Virippu	0	7	586
8	2011-12 Mundakan	887	8	456
9	2011-12 Puncha	0	9	326

Figure 3.6
Area under Paddy Cultivation (2009-10 to 2011-12)
Trend Equation y=1496-130x



Paddy cultivation has shown a steady decreasing trend. Due to the lack of proper data, we cannot clearly predict the trend in the area of paddy cultivation.

As far as the self help groups are concerned there are only 3 groups engaged in paddy cultivation. Major reason for low paddy cultivation is that as paddy cultivation calls for lot of labour and heavy doses of irrigation, many farmers are looking for more lucrative ventures. This has led to paddy lands converted for cultivation of other crops like banana & coconut. Another major reason is the other spread of brick industry in panchayat.

Production of Paddy

As the area under cultivation of paddy is showing a decreasing trend, the total production has showed a slightly increasing trend. Production of paddy in tonnes is given below. Production is calculated during mundakan season only as it is the only prominent season.

Table 3.11
Production of Paddy Mundakan (2009-10 to 2011-12)

Sl.No.	Year	Production (In tonnes)
1	2009-10	257.05
2	2010-11	266.80
3	2011-12	275.82

Productivity of Paddy

The success or failure of any product can be determined by its productivity. The area and production is decreasing over the years, the productivity per hectare has shown a slightly positive change.

Table 3.12
Productivity of Paddy Mundakan
(2009-10 to 2011-12)

Sl.No.	Year	Productivity (Tonne per ha)
1	2009-10	2.65
2	2010-11	2.76
3	2011-12	2.84

Productivity of Paddy Mundakan (2009-10 to 2011-12)

The reason for slight increase in productivity may be attributed to the mechanization brought out through various schemes. Improved varieties, crop management and interventions of the department of agriculture have helped in reducing the impact of decline in the cultivated area.

Coconut

Coconut is grown all over the world except in the continents of Europe & Australia. India rank first in the production of coconut. Among the Indian states, Kerala contributes more than 40% of the total production.

Table 3.13
Number of Coconut Palms Cultivated

Year	Season		Total
	Wet	Dry	
2009-10	6713	15628	92341
2010-11	6212	15605	21819
2011-12	4792	15074	19866

Figure 3.9
Number of Coconut Palms Cultivated

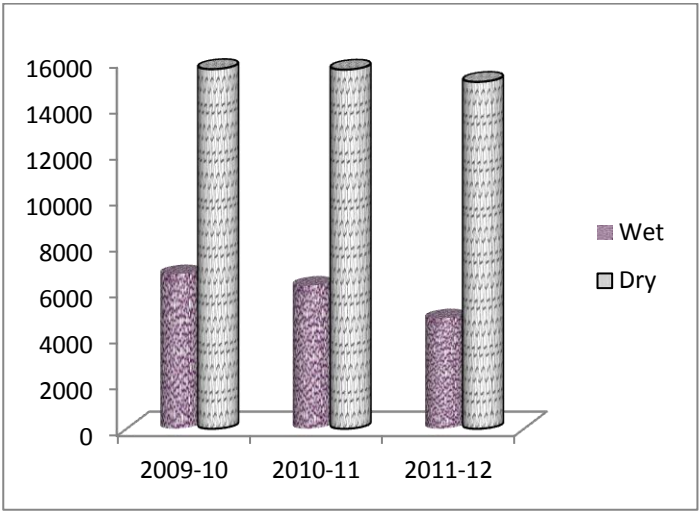
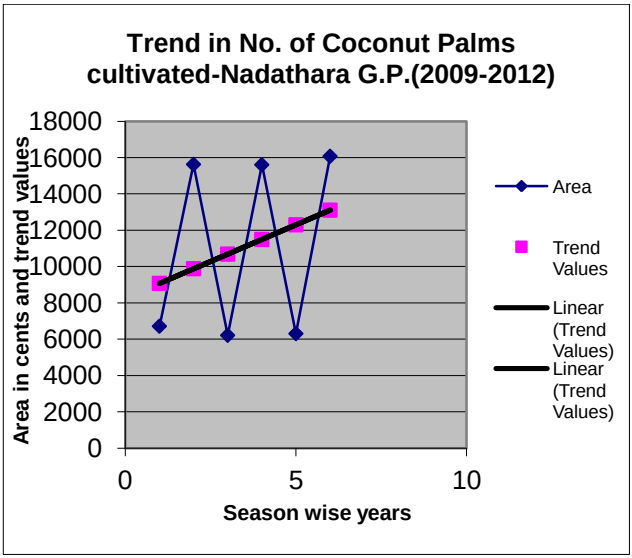


Table 3.14
Trend in the Number of Coconut Palms Cultivation
(2009-10 to 2011-12)

Year	No. of Coconut	Value of x	Trend value
2009-10wet	6713	1	9335
2009-10	15628	2	9869
2010-11	6212	3	10403
2010-11	15605	4	10937
2011-12	4792	5	11471
2012-12	15074	6	120055

Figure 3.10
Number of Coconut Palms Cultivated



Trend line shows that total number of coconut palms has been increasing slowly over the year, it may be due to majority of coconut farmers are poor and they have only small or marginal land for cultivation. Other reason is that very high price fluctuation and inadequate storage facilities.

Production of Coconut

Though the number of coconut palms cultivated has shown a decreasing trend, total production of coconut now showing an increasing trend. It may be due to better management practices.

Table 3.15
Production of Coconut (2009-10 to 2011-12)

Sl.No	Year	Production (In million tonnes)
1	2009-10	33.08
2	2010-11	34.50
3	2011-12	36.87

Source: Report, Nadathara Krishibhavan

Productivity of Coconut

Productivity of coconut palms are almost stagnant, due to the prevalence of root (wilt) disease, any significant increase in productivity cannot attained.

Table 3.16
Productivity of Coconut (2009-10 to 2011-12)

Sl.No	Year	Productivity (In tonnes/ha)
1.	2009-10	52.5
2.	2010-11	54.3
3.	2011-12	56.0

Source: Report, Nadathara Krishibhavan

Banana and Other Plantains

Banana is the most popular fruit demanded by the people all over the world. India ranks the first position in the world with regard to the production of banana and is not highly entered in external trade. Tamilnadu occupies the first position in India in terms of production as well as in the area of cultivation of banana and other plantains. Farmers engaged in banana and other plantain cultivation in some parts of Kerala also engaged in multiple cropping. In Kerala people demand higher volume of domestically produced banana. Recently it was

observed that many states are competing to stimulate export of banana to Kerala.

Area under Cultivation Banana & Other Plantains

The area under cultivation of banana and other plantains shows an increasing trend over the years.

Table 3.17
Area of Banana Cultivation (2009-10 to 2011-12)

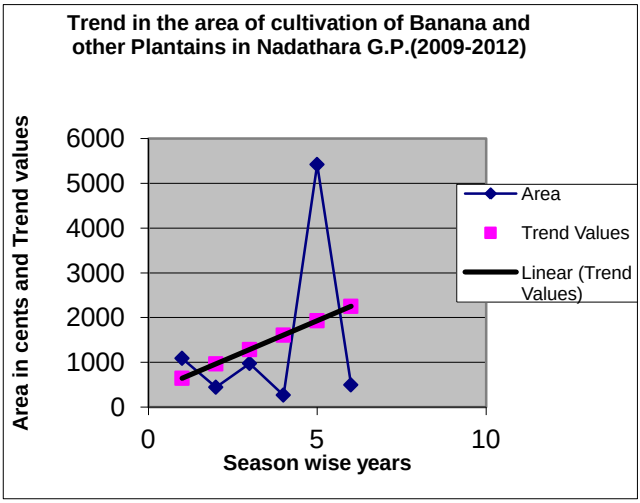
Year	Season		Total
	Wet	Dry	
2009-10	1088	442	1530
2010-11	973	266	1239
2011-12	5420	494	5914

Source: Sample survey report, Taluk Statistical Office, Thrissur

Table 3.18
Trend in the Area of Production (2009-10 to 2011-2012)
Equation y = 322 x +320

Season wise	Area (In cents)	Value of X	Trend value
09-10 wet	1088	1	642
09-10 dry	442	2	964
10-11 wet	973	3	1284
10-11 dry	266	4	1606
11-12 wet	5420	5	1928
11-12 dry	494	6	2250

Figure 3.13
Trend in the Area of Production (2009 to 2012)



Production of Banana & Other Plantains

A lot of paddy lands have converted for the cultivation of banana plants. Banana cultivation is not uniform over the past year. This is due to the factors that availability of irrigation available is not adequate, large scale cultivation is low, small scale banana cultivation is also profitable but pest attack is very high.

Table 3.20
Production of Banana & Other Plantains
(2009-10 to 2011-12)

Sl.No	Year	Production (In tonnes)
1	2009-10	5300
2	2010-11	54100
3	2011-12	54900

Source: Report, Nadathara Krishibhavan

Productivity of Banana & Other Plantains

Productivity of banana and other plantains has been increasing due to the introduction of new varieties of Banana and use of organic fertilizers.

Table 3.21
Productivity of Banana & Other Plantains
(2009-10 to 2011-12)

Sl.No	Year	Productivity (tonnes per ha)
1	2009-10	26.5
2	2010-11	27.3
3	2011-12	29.0

Source: Report, Nadathara Krishibhavan

Vegetables

Vegetables are essential food supplements for livelihood, but we are heavily dependent on other states for our daily vegetable requirements cultivation can be taken up on smaller scale in every home stead. If a family is able to meet its requirement from its own backyard, the savings on food

expenditure will be remarkable. Total area utilized for the production of vegetables has shown remarkable change.

Table 3.22
Season Wise Area of Cultivation of Vegetables
(Area in cents)

Year	Season			Total
	Virippu	Mundakan	Puncha	
2009-10	45	250	181	476
2010-11	66	133	205	404
2011-12	340	294	1739	2373

Figure 3.16
Season Wise Area of Cultivation of Vegetables
(Area in cents)

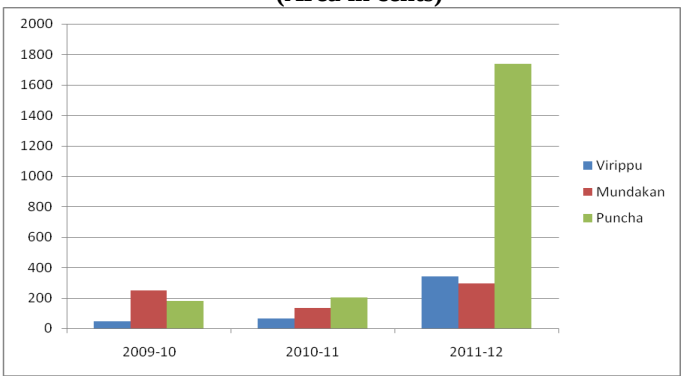
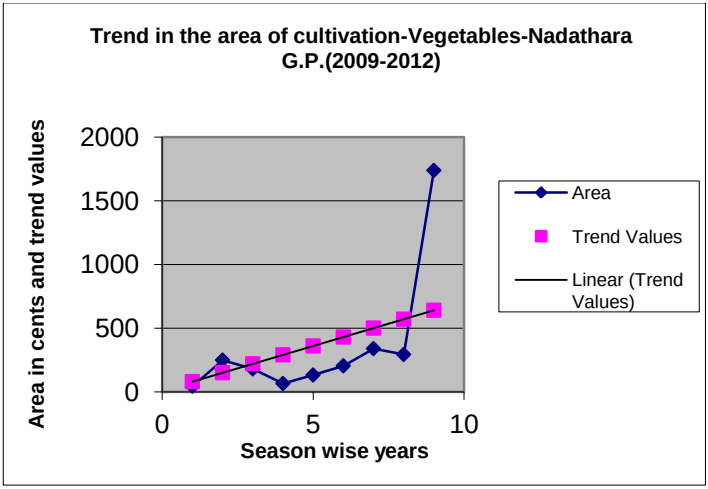


Table 3.23
Trend in the Area of Cultivation of Vegetables
Trend Equation y = 10.95x + 70.01

Season wise	Area	Value of x	Trend Value
2009-10 Virippu	45	1	8095
2009-10 Mundakan	250	2	9191
2009-10 Pancha	181	3	102.85
2010-11 Virippu	66	4	113.81
2010-11 Mundakan	133	5	24.75
2010-11 Puncha	205	6	135.7
2011-12 Virippu	340	7	146.65
2011-12 Mundakan	294	8	157.6
2011-12 Puncha	1739	9	168.55

Figure 3.17
Trend in the Area of Cultivation of Vegetables
Trend Equation y = 10.95x + 70.01



Total area of cultivation of vegetables in the panchayat has show a positive trend, though the drastic change was noticed during 2011-12 year.

Production of Vegetables

An increasing trend in area as well as production is noticed for vegetables. The area has almost doubled and production has shown a remarkable increase.

Table 3.25
Production of Vegetables (2009-10 to 2011-12)

Sl.No	Year	Production (In tonnes)
1	2009-10	2684
2	2010-11	2802
3	2011-12	3102

Source: Report, Nadathara Krishibhavan

Productivity of Vegetables

Productivity of almost all crops has increased including that of vegetables. But the rate of growth is low.

Table 3.26
Productivity of Vegetables (2009-10 to 2011-12)

Sl.No.	Year	Productivity (Tonnes per ha)
1	2009-10	22
2	2010-11	25
3	2011-12	29

Source: Report, Nadathara Krishibhavan

Analysis of Primary Data

From the analysis of primary data collected from the 30 beneficiaries following conclusions are made.

From the occupational characteristics of the respondents it was clear that large number of beneficiaries is traditional agricultural labours. Then comes coolies, government employees and others. Of the total number of beneficiaries 5 of them have agricultural loan which was taken mainly for co-operative societies.

Table 3.27
Total Area under Cultivation of Different Crops

Area	No. of Beneficiaries	Percentage to Total
Below 1 Acre	13	43.33
1-2 Acre	10	33.33
2 And Above	7	23.33
Total	30	100

From the analysis of data it is clear that land holdings are small limiting the scope for large scale cultivation. Most of the cultivators have lands below one acre.

In spite of this, if we analyse the number of cultivators taken land on lease, only 6 families has taken land which was for paddy and banana cultivation no more land has taken for the cultivation of vegetable and coconut

Almost all the respondents use electrified irrigation facilities. Majority uses drilled wells and complained of the lack of irrigation facilities.

Table 3.28
Number of Coconut Trees Produced

Number	No. of Beneficiaries	Percentage to Total
Below 50	15	50.00
50-100	10	33.33
100 and Above	5	16.67
Total	30	100

Total number of coconut trees cultivated show that most of the farmers cultivating below 50 numbers. Large scale cultivation was for 5 farmers only.

Table 3.29
Number of Banana Plants Produced

Number	No. of Beneficiarie	Percentage to Total
Below 100	10	33.33
100-200	8	26.67
200 and Above	12	40.00
Total	30	100

Nadathara panchayath has shown a positive trend towards banana cultivation. Large number of cultivators has number of banana plants above 200.

Table 3.30
Total Area under Paddy Cultivation

Area	No. of Beneficiaries	Percentage to Total
Below 1 Acre	8	26.66
1-2 Acre	2	6.66
2 and Above	1	3.33

Only 11 families were engaged in paddy cultivation in which the area was also very low.

Table 3.31
Total Area under Vegetable Cultivation

Area	No. of Beneficiari	Percentage to Total Enumerated
Below 10 cents	9	30
10-30	15	50
30 and Above	6	20

Use of High Yielding Variety seeds is very low and they mainly use traditional seeds. Mainly organic fertilizers are used. Sometimes chemical fertilizers and pesticides are used in consultation with the agriculture department. Occurrence of disease is frequent and the uses both organic as well as chemical fertilizers.

As most of the beneficiaries are traditional agriculture labourers, most of the family members are engaged in agriculture

activities. Unavailability of labourers has complained by some beneficiaries.

Table 3.32
Distribution of Agriculture Products

Pattern of Distribution	No. of Beneficiarie	Percentage to Total
Only for self consumption	4	13.33
Sales through agents	15	50.00
Sales through authorized dealers	19	63.33

From the analysis of above data it is clear that products are distributed through agents and authorized dealers both of them are almost equal. So we cannot ensure better prizes to the farmers.

Table 3.33
Number of Beneficiaries of Implements, Seeds and Pesticides/Insecticides

Type of Subsidies	No. of Beneficiaries
Agriculture implements	6
High Yielding Varieties of Seeds	24
Pesticides/Insecticides	27

Most of the beneficiaries are for pesticides and insecticides, agricultural implements are very short compared to its demand.

- Major problems faced by the farmers
- Lack of proper awareness as well as knowledge about the ongoing schemes
- Lack of proper irrigation facilities
- Lack of proper marketing facilities
- Increased role of agents
- Fluctuating prices
- Increasing prices of land on lease
- Occurrence of disease
- Untimely distribution of benefits to the farmers

Identification and Prioritization of Problem and Prospects for Improvement

There are many problems faced by the cultivator during the production process. Some of the identified problems by crop wise are given below.

a. Paddy

Conversion of paddy land for other uses and following have led to decreasing production of paddy. Scarcity of labour or machinery is a major problem faced by farmers. Scarcity and unavailability of seeds in time are other areas that need immediate attention. Natural calamities make an important barrier to sustain profitable cultivation in paddy lands. Another &major problem faced by the farmers of Nadathara panchayat is the lack of water management facilities.

b. Coconut

Spread of diseases and pests leads to decrease in production of coconuts. Prices are always fluctuating and the farmers never able to sell the products at expected prices. Labour scarcity especially for harvesting major bottleneck in taking up coconut cultivation as dependable venture. Lack of suitable Machinery for harvest is another aspect that needs attention.

c. Banana

Lack of facilities and awareness for value addition is major factor in banana production. Diseases and pests lead to crop loss and hence farmers are competed to go for hazardous chemicals. Banana plants are severely prone to natural calamities. An underutilization facility for export is another major problem.

d. Vegetables

Price fluctuations have been a perpetual problem in vegetable marketing. Prices change even on a day to day basis. Control of diseases and pests incur heavy loses to the farmers. Vegetables are severely prone to nature calamities lack of facilities and awareness value addition export and marketing are the major problems.

Prospects for Improvement

The possibility of paddy cultivation in uplands has to be explored. Suitable varieties are now available for upland cultivation of paddy. New varieties are to be introduced to replace the existing varieties that are showing decline in yield potential. An effective system for pest and disease surveillance and monitoring has to be placed at the earliest. This will ensure prevention of loss of produce and will also lead to food production practices with minimum use of chemicals.

There is abundant scope for product diversification in paddy rice bran and the oil extracted from it has a number of commercial uses. A lot of finished products other than raw rice can be manufactured from paddy. Facilities for procurement and processing have to be strengthened and modern rice mills are to be established. Another major area to be stressed is the extension of irrigation facilities.

Banana and vegetable cultivation have to be streamlined with a view on export. There is greater demand for fruits and

vegetables from other states, Gulf countries & the European nations. As Thrissur has a major advantage of the proximity of Cochin International Airport Limited (CIAL). The farmers can be trained to adjust their cultivation by handling and packing practices to suit the needs of the foreign markets. Suitable varieties that will ensure more taste have to be evolved by keeping quality. Cool season vegetables have a scope during the October – January season and their cultivation can be taken up even on less fertile lands.

Coconut is the major plantation crop and the disease affected palms has to be located and replaced by healthy seedlings, adding irrigation facilities to a great extent will increase production. Inter cropping has to be promoted in coconut gardens as a source of additional income. Production and productivity can be enhanced by introducing group management in coconut at the ward levels.

Group farming approach has to be promoted in paddy cultivation. Availability of good quality and chemical free vegetables is ensured only by promoting home stead cultivation of vegetables. The paddy lands which are kept fallow during off seasons have to be located and vegetable cultivation can be carried out through organic farming. Attractive subsidies has to be given to the farmers people's participation has to be ensured at each and every stage of development. A number of seminars/working groups has to be convened to the group farming societies and committees. Use of organic manures and energy conservational practices has to be promoted.