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CHAPTER VI
DYNAMICS OF NET AREA SOWN
AND
FACTORS AFFECTING NET AREA SOWN

6.1. Introduction

Net Area Sown represents the extent of cultivable land which is used for raising crops and actually sown once during an agricultural year. The area which is cultivated twice in the case of paddy is considered as Area Sown More than Once and is added to Net Area Sown in order to obtain the Gross Cropped Area. The Utilisation of Net Area Sown is very important as Net Area Sown is the land base for cultivation of crops. The variations in Net Area Sown utilised for cultivation of different crops is relevant to know about the dimensions or diversions of cultivation.

6.2. Dynamics of Cropping Pattern in Net Area Sown in Physiological Zones

Dynamics of Cropping Pattern is analysed by considering the Decadal changes in Cropping Pattern in Physiological Zones in three different Phases.

- Phase I – 1991 to 2000
- Phase II – 2001 to 2010
- Phase III – 2011 to2019

The Crops cultivated in the study area is categorized into Food and Non Food Crops to know about the food availability created by farmers. Food Crops are the crops which are grown for the sole use of human consumption. Non-food crops are used for attaining profit rather than for consumption. The Change in cultivation of Food Crops and Non-Food Crops in Physiological Zones in three phases is given in Table 6.1.

Table 6.1.

Dynamics in Cultivation of Food and Non- Food Crops in Physiological Zones

Physiological Zones	Food Crops			Growth Rate			Non –Food Crops			Growth Rate		
	I	II	III	I -II	II - III	I -III	I	II	III	I -II	II - III	I -III
Lowland	100	100	100	0.0	0.0	0.0	0	0	0	0	0	0
Midland	80.2	78.8	80.2	-1.7	1.8	0.0	19.8	21.2	19.8	7.07	-6.60	0.00
Highland	84.6	83.7	83.7	-1.1	0.0	-1.1	15.4	16.3	16.9	5.84	3.68	9.74

Source : Primary Field Survey

In Lowlands, only Food Crops are cultivated in the three different phases from 1991 to 2019. Since the topography is suitable only for the cultivation of Paddy, the

farmers preferred the production of Food Crops only, that is Paddy cultivation in the area. In Phase I, in Midlands, 80.2 percent of Net Area Sown is used for production of Food Crops and only 19.8 percent for Non- Food Crops. In Phase II, 78.8 percent of Net Area Sown is used for production of Food Crops while only 21.2 percent is used for Non- Food Crops. A very slight variation can be seen in Food Crops as well as Non-Food Crops and thus creating a agricultural stagnancy in the Net Area Sown. In Highlands, area under Food Crops decreased from 84.6 to 83.7 percent showing a very low declining trend while area under Non- Food crops increased by 1.5 percent which is a very low increasing trend. Since the farmers have a personal interest in cultivation and the Area owned is a hereditary property, they are interested in continuing the agricultural system that their forefathers have implemented. The study area reveals the relevance of the attitude of farmers towards the cultivation of Food Crops and making the family and economy secured in food availability.

Paddy is the main Food Crop that is cultivated in the study area and Net Area Sown under paddy is varying in different categories of land in the selected Panchayats. The Cross – Section data revealing the size of Net Area Sown under Paddy in the Panchayats is given in Table 6.2

Table 6.2.

Dynamics of Net Area Sown under Cereals - Paddy

NAS	Paddy														
	Marginal			Small			Semi-Medium			Medium			Total		
	I	II	III	I	II	III	I	II	III	I	II	III	I	II	III
I	19.6	5.0	0.0	6.5	3.4	0.0	7.7	0.0	0.0	0.0	0.0	0.0	16.4	4.2	0.0
II	19.6	26.1	31.6	41.9	44.8	46.4	84.6	91.7	91.7	100	100	100	29.0	36.4	42.0
III	32.9	31.9	23.5	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.6	23.0	16.1
IV	27.8	37.0	44.9	48.4	51.7	53.6	7.7	8.3	8.3	0.0	0.0	0.0	29.0	36.4	42.0
V	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source : Primary Field Survey

Row wise - I – Kodassery, II – Venkitangu, III – Pazhayannur, IV – Kuzhalmannam, IV – Agali.

Column-wise– I – Phase I, II – Phase II,III– Phase III.

The Table elucidates that in Kodassery, the Net Area Sown under paddy has been decreased from 16.4 percent in Phase I to 0 percent in Phase III. In Venkitangu, the Net Area Sown under paddy has been increased from 29.0 percent in Phase I to 42.0 percent in Phase III.In Pazhayannur, the Net Area Sown under paddy has been decreased from 25.6 percent in Phase I to 16.1 percent in Phase III. In Kuzhalmannam, the Net Area Sown under paddy has been increased from 29.0 percent in Phase I to 42.0 percent in Phase III. In Phase I, the Net Area Sown was proportionally distributed between the four panchayats except Agali where no paddy cultivation exists. In Phase III, the Net Area Sown under Paddy doesnot exist in Kodassery and Agali and decreased further in Pazhayannur giving a negative indicator for cereals production especially the Staple Food of Kerala. Net Area Sown is now absent in Kodassery and Agali while that of Pazhayannur is also decreasing. But still there exists a positive indicator of development in production of cereals in Venkitangu and Kuzhalmannam where the farmers cannot change the utilisation pattern due to the specific features of Physiological Zones and Zoning Regulations Act in agriculture through the Wetland and Paddy Conservation Act. Among the selected Panchayats, Venkitangu and Kuzhalmannam leads in the production of Paddy Cultivation.

In Kodassery (I), the Net Area Sown have been declined from 19.6 percent in Phase I to 0 percent Phase II in Marginal Lands, from 6.5 percent to 0.0 percent in Small Sized area, from 7.7 perecnt to 0.0 percent in Semi- Medium lands. In Venkitangu(II), Net Area Sown under Paddy increased from 19.6 to 31.6 in Marginal lands, 41.9 to 46.4 percent in Small sized lands, 84.6 to 91.7 percent in Semi-Medium lands and 100 percent in the Medium lands. In Kuzhalmannam (IV) also, Net Area Sown increased from 27.8 to 44.9 percent in Marginal lands, 48.4 to 53.6 percent in Small sized lands, 7.7 to 8.3 percent in Semi-Medium sized lands while no Medium sized land with greater than 4 Hectares exists in the area.

As history says, State Kerala is derived from Kera which means Coconut and 'Alam' meaning Coconut Tree which means "Land of Coconut Trees". Kerala has the largest area under Coconut Cultivation but has third largest position in production. In the three Phases, Coconut, the leading cultivation in Kerala have to be analysed as Coconut is one of the leading cultivations in Kerala. In the past decades, Coconut was considered as main source of income to the farmers of Midlands and Highlands. Since cultivation of other crops is not suitable for Lowlands, Coconut is not cultivated in the specific area. But

in some areas, planting Coconut in domes in the land is considered as the first step of conversion of agricultural land to land that can be used for other purposes.

Table 6.3.

Dynamics of Net Area Sown underOilseeds - Coconut

Physiological Zones	Panchayats	Marginal			Small			Total		
		I	II	III	I	II	III	I	II	III
Highlands	Kodassery	42.7	34.1	35.2	50.0	85.7	70.0	41.0	36.4	36.9
	Agali	8.0	9.1	6.8	50.0	14.3	30.0	14.5	13.1	13.6
Midlands	Pazhayannur	49.3	56.8	58.0	0.0	0.0	0.0	44.6	50.5	49.5

Source : Primary Field Survey

Within the total Net Area Sown used for coconut cultivation, 44.6 percent is cultivated in Pazhayannur, 41 percent in Kodassery and 14.5 percent in Agali in Phase I, 50.5 percent in Pazhayannur, 36.4 in Kodassery, 13.1 percent in Agali in Phase II and 13.6 percent in Agali, 36.9 percent in Kodassery and 49.5 percent in Pazhayannur in Phase III. Area under Coconut cultivation is almost stagnant in Agali with 14 percent while Net Area Sown in Pazhayannur is highest and increasing from 44.6 percent in Phase I to 49.5 percent in Phase III while that of Kodassery is showing a declining trend from 41.0 to 36.9 percent. Within the Marginal lands, Pazhayannur leads in all phases along with an increasing trend from 49.3 percent to 58.0 percent while no cultivation exists in Small, Semi-Medium and Medium sized lands.

Spices and Condiments includes agricultural products such as arecanut, pepper, nutmeg, vanilla and is mainly cultivated in Pazhayannur in Midlands and Kodassery, Agali in Highlands.

Table 6.4.

Dynamics of Net Area Sown underSpices and Condiments

Physiological Zones	Spices and Condiments	Panchayats	Marginal		
			I	II	III
Midlands	Arecanut	Pazhayannur	93.1	94.6	100
Highlands	Arecanut	Agali	6.9	5.4	0
Midlands	Pepper	Pazhayannur	100	100	100
Midlands	Nutmeg	Pazhayannur	5.6	14.0	22.7
Highlands	Nutmeg	Kodassery	94.4	86.0	77.3
Midlands	Vanilla	Pazhayannur	0.0	0.0	100

Source : Primary Field Survey

Arecanut, Pepper and Vanilla is produced mainly in Pazhayannur in Midlands while Kodassery in Highlands leads in the production of Nutmeg with 77.3 percent. Comparing the three Phases, area under production of Arecanut is increasing in Pazhayannur, while area is decreasing in Agali. Area under Pepper cultivation remained constant and is exclusive in Pazhayannur. The cultivation of Nutmeg is preferred by farmers in Kodassery as the price of Nutmeg is increasing. But area under cultivation of Nutmeg is decreasing in the corresponding Phases due to plant diseases.

Food crops including Fresh Fruits, Tapioca, Vegetables are also cultivated in Midlands and Highlands. Fresh Fruits includes Plantain, Tubers like Tapioca, Vegetables and Pulses which are rich in vitamins are also included in agricultural production in the selected area.

Table 6.5.

Dynamics of Net Area Sown underOther Food Crops, Pulses and Non-Food Crops

Physiological Zones	Other Crops	Panchayats	Marginal			Small			Semi-Medium		
			I	II	III	I	II	III	I	II	III
Highlands	Fresh Fruits – Plantain	Kodassery	36.4	32.8	28.8	14.3	17.4	25.9	0.0	0.0	0.0
		Agali	50.0	25.0	9.1	85.7	82.6	74.1	100	100	100
Midlands		Pazhayannur	13.6	42.2	62.1	0.0	0.0	0.0	0.0	0.0	0.0
Highlands	Tapioca	Kodassery	100	100	100	100	100	100	0.0	0.0	0.0
Highlands	Vegetables	Kodassery	0.0	4.5	7.7	100	100	100	0.0	0.0	0.0
Midlands		Pazhayannur	100	95.5	92.3	100	100	100	0.0	0.0	0.0
Highlands	Pulses	Agali	69.9	76.0	83.3.	85.7	75.9	72.8	76.2	72.2	66.7
Non-Food Crops – Plantation Crops											
Midlands	Rubber	Pazhayannur	92.3	90.0	80.0	0.0	0.0	0.0	0.0	0.0	0.0
Highlands		Kodassery	7.7	10.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0
Highlands	Cocoa	Kodassery	0.0	0.0	100	0.0	0.0	0.0	0.0	0.0	0.0

Source : Primary Field Survey

Other Crops and Pulses which are included as Food Crops are cultivated in the study area especially in Midlands and Highlands. Area under cultivation of Vegetables and Plantain is leading in Pazhayannur especially Chengalikkodan, while that of Pulses is leading in Agali. Plantain cultivation in Pazhayannur is increasing at a faster rate in three phases while in Kodassery, Plantain cultivation is showing a declining trend, while Tapioca is cultivated mainly in Kodassery. In Pazhayannur, Plantain cultivation is done mainly In Marginal lands and in Kodassery, Plantain cultivated in Small sized lands showed an increasing trend while in Agali, Plantain cultivation is showing a decreasing

trend due to destruction of agricultural land by animals especially bananas. In Kodassery, the proportion of Net Area Sown for plantain cultivation is decreasing from 36.4 percent in Phase I to 28.8 percent in Phase III. In Agali, areal plantain cultivation in Marginal lands decreased from 50.0 to 9.1 percent. The farmers who use Semi-Medium lands is fully utilizing area for Plantain cultivation. Pazhayannur is the leading producer of vegetables and Kodassery is showing an increasing trend in the production of vegetables. Pulses are produced by farmers of Agali in Highlands and the proportion of Net Area Sown increased from 69.9 percent in Phase I to 83.3 percent in Phase II in Marginal lands, while showed a decreasing trend from 85.7 percent in Phase I to 72.8 percent in Phase III in Small sized lands and 76.2 percent in Phase I to 66.7 percent in Phase III in Semi-Medium sized lands. Non Food Crops which include Rubber and Cocoa was cultivated mainly in Pazhayannur in Midlands and Kodassery in Highlands. No farmer in Agaliprefered to cultivate Non Food Crops in the owned Net Area Sown. Area – wise cultivation of Rubber increased in Kodassery from 7.7 percent in Phase I to 20.0 percent in Phase III in Marginal lands and Cocoa is produced in Kodassery.

6.3. Utilisation Pattern of Net Area Sown in selected Panchayats

Net Area Sown in Kodassery is utilised by cultivating Food Crops – Paddy, Coconut, Plantain, Nutmeg, Tapioca, Vegetables and Non – Food Crops – Rubber, Cocoa in Marginal and Small sized lands and the utilisation pattern of Net Area Sown is represented in Table 6.6.

Table 6.6.

Utilisation of Net Area Sown – Kodassery(Highland)

Crop Category	Crops	Marginal			Small			Total			Growth
		I	II	III	I	II	III	I	II	III	I to II
Food Crop	Paddy	24.6	5.5	0	18.2	5.3	0	24.6	5.4	0.0	-100.00
	Coconut	25.4	27.5	29.5	18.2	31.6	28.0	24.6	27.9	29.2	18.70
	Plantain	12.7	19.3	18.1	18.2	21.1	28.0	13.0	20.2	20	53.85
	Nutmeg	27.0	33.9	32.4	27.3	36.8	36.0	26.8	34.1	33.1	23.51
	Tapioca	0.8	3.7	7.6	9.1	5.3	8.0	1.4	3.9	7.7	450.00
	Vegetables	0.0	0.9	2.9	9.1	0.0	0.0	1	0.8	2.3	130.00
Non-Food Crop	Rubber	9.5	8.3	7.6	0.0	0.0	0.0	8.7	7.0	6.2	-28.74
	Cocoa	0	0.9	1.9	0	0.0	0.0	0.0	0.8	1.5	---

Source : Primary Field Survey

The table reveals that Paddy cultivation decreased sharply from 24.6 percent in Phase I to 0.0 percent in Phase II and Paddy cultivation is completely absent in the Phase III. Cultivation of Coconut, Plantain, Nutmeg, Tapioca, Vegetables showed an increasing trend with growth rate of 18.70, 53.85, 23.51, 450.50 and 130.00 percent respectively while Rubber and Paddy showed a declining trend with a negative growth rate of -100 and – 28.74 percent respectively in Kodassery. Coconut and Plantain cultivation in Net Area Sown in Small sized land is showing a higher increasing trend than in Marginal sized lands.

Net Area Sown is influenced by determinants such as Price, Yield per Hectare, Cost of Production, Total Revenue and Profit obtained from the crops cultivated in the area. The Profit analysis of crops cultivated gives a clear illustration of the reasons for change in Net Area Sown under different crops in different phases. The spatial areal pattern under different crops varies according to changes in the determinants especially the price of the same crop produced. Price of a commodity and yield per hectare were the most important determinants for change in cropping pattern and profit is calculated by the difference between Total Revenue and Total Cost. The variables such as Price, Yield per Hectare, Cost of Production, Total Revenue and Profit in Three Phases were considered for explaining the variations in crop cultivated in the Net Area Sown which is represented in Table 6.7.

Table 6.7

Profit Analysis of Crops Cultivated - Kodassery

Crops	Phases	Price	Yield/Hect	Total Cost	Total Revenue	Profit/ Hect	Reasons
Paddy	Phase I	7.76	918.40	1892.78	7423.41	5530.63	Climate vulnerable, irrigation, Neighbourhood change, increasing cost of labour, Rise in price of other crops
	Phase II	12.29	873.64	6017.14	10668.86	4651.71	
	Phase III	0.0	0.0	0.0	0.0	0.0	
	Growth rate	-100.00	-100.00	-100.00	-100.00	-100.00	
Coconut	Phase I	6.18	1956.98	5139.93	12084.96	6945.04	Increasing prices Less irrigation
	Phase II	11.72	1960.76	7426.13	22989.15	15563.03	
	Phase III	15.03	1968.62	14957.29	29581.41	14624.12	
	Growth Rate	143.28	0.59	191.00	144.78	110.57	
Plantain	Phase I	20.00	2427.75	6007.50	48555.00	42547.50	Increasing Prices Climate vulnerable Lack of irrigation
	Phase II	30.38	2417.54	8444.09	73336.15	64892.06	
	Phase III	40.50	2152.73	14875.96	87162.23	72286.27	
	Growth Rate	102.50	-11.33	147.62	79.51	69.90	
Rubber	Phase I	225.00	651.38	28350.00	146559.38	118209.38	Decreasing Prices
	Phase II	175.00	684.00	39600.00	119700.00	80100.00	
	Phase III	153.13	708.24	46828.13	112336.88	65508.75	

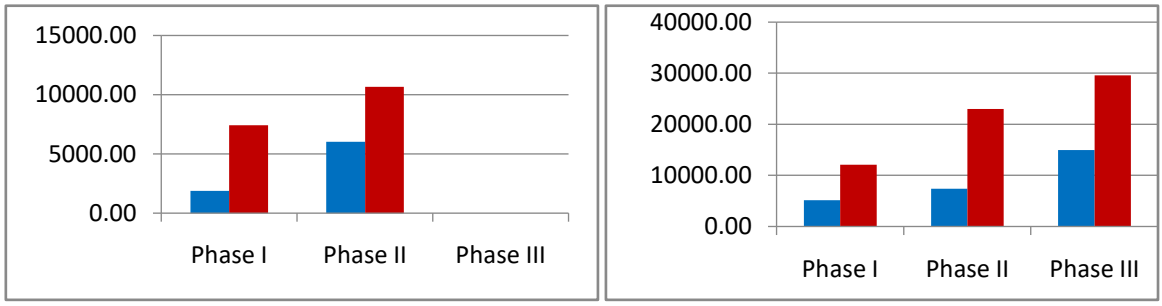
	Growth Rate	-31.94	8.73	65.18	-23.35	-44.58	
Nutmeg	Phase I	100.00	804.53	6414.32	80452.70	74038.38	Increasing Prices Plant diseases
	Phase II	232.50	815.61	7695.00	189632.97	181937.97	
	Phase III	336.74	814.05	13327.33	274185.94	260858.62	
	Growth Rate	236.74	1.18	107.77	240.80	252.33	
Tapioca	Phase I	6.00	4050.00	6075.00	24300.00	18225.00	Increasing Production Increasing prices
	Phase II	12.60	3888.00	10125.00	48600.00	38475.00	
	Phase III	15.00	4058.10	14175.00	60871.50	46696.50	
	Growth Rate	150.00	0.20	133.33	150.50	156.22	
Vegetables	Phase I	10.00	2794.50	6075.00	27945.00	21870.00	Increasing Production Increasing prices
	Phase II	20.00	2835.00	12150.00	56700.00	44550.00	
	Phase III	30.00	2835.00	17550.00	56700.00	44550.00	
	Growth Rate	200.00	1.45	188.89	102.90	103.70	
Cocoa	Phase II	180.00	1012.50	10125.00	182250.00	172125.00	Increasing Prices
	Phase III	240.00	1012.50	20250.00	243000.00	222750.00	
	Growth Rate	-----	-------	------	-------	-------	

Source : Primary Field Survey

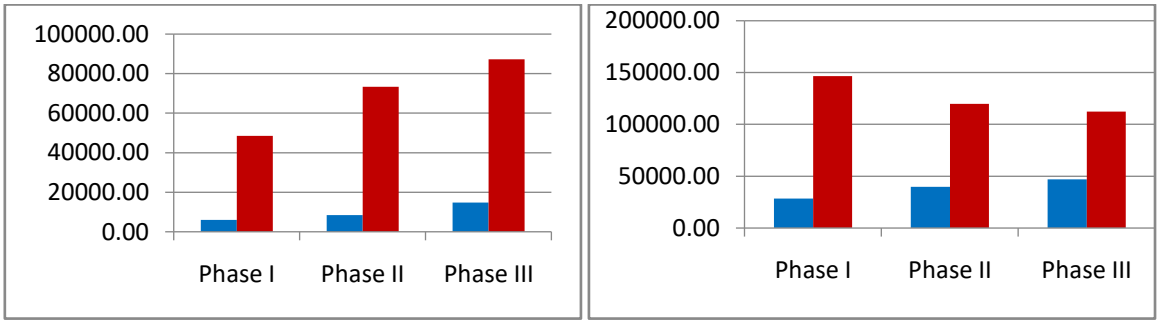
In Kodassery, the main crops cultivated are Paddy, Coconut, Plantain, Rubber, Nutmeg, Tapioca, Vegetables, Cocoa and Paddy cultivation in Kodassery declined and not existed in the Phase III. The reasons identified for the declining trend is not the falling prices but climate vulnerability, increasing cost of production, Conversion of Neighbourhood land and blocking of irrigation facilities through canaling system. The farmers in the area were also influenced by the relative prices of crops such as nutmeg, vegetables, tapioca and coconut. Coconut cultivation was profitable due to increasing prices but the yield is almost constant throughout the three phases. Increase in profit is the result of increasing prices while the yield per hectare remained almost stagnant in first two phases and decreased in III phase in Coconut cultivation. Yield became negative due to climate vulnerability which occurred due to heavy rain and fast blowing wind. In the case of Rubber cultivation, decreasing price reflecting a growth rate of 31.94 percent led to decreasing revenue and the farmers are converting land to other cultivations. Nutmeg cultivation is promoted by the farmers of the area as price is increasing while the yield per hectare remained constant as plant infectious diseases affected the cultivation. Tapioca, vegetables and cocoa showed an increasing trend in price and a stagnancy in quantity produced. But still the cultivation of crops except paddy and rubber is profitable for the farmers. The declining trend of paddy is a threat to create food security in the area. Variations in Cost and Revenue of different crops in three phases is represented graphically as in Figure 6.1.

Figure 6.1.

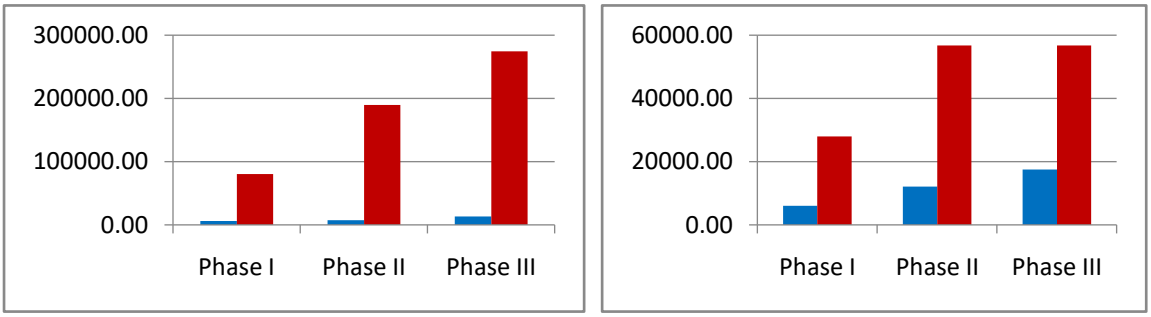
Cost and Revenue of Paddy and coconut cultivation



Plantain and Rubber cultivation



Nutmeg and Tapioca cultivation



Food Crops cultivated in Net Area Sown includes Paddy, Coconut, Plantain, Nutmeg, Tapioca and Vegetables while Non-Food Crops include Rubber and Cocoa cultivation. Among the food crops, main staple food – Paddy shows a declining trend which is considered as a serious problem as the shortage of rice create the deficiency of carbohydrate in people which result in the existence of an unhealthy population as well as young generation which adversely affect the economic growth of the state.

The Utilisation pattern of Net Area Sown in Pazhayannur reflected the crops preferred in the land with different size in different Phases. The cropping pattern in Net Area Sown is given in Table 6.8

Table 6.8.

Utilisation of Net Area Sown - Pazhayannur

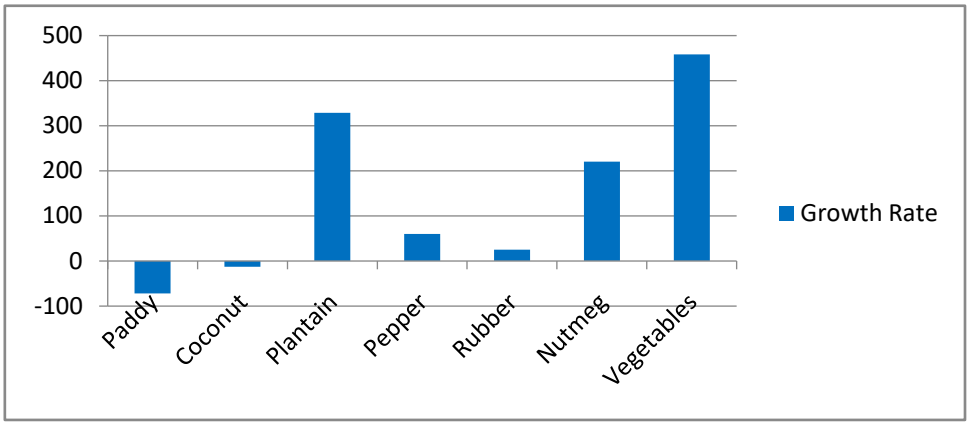
Crops	Marginal			Growth Rate
	I	II	III	
Paddy	39.7	21	11.1	-72.04
Coconut	28.2	27.6	24.5	-13.12
Plantain	4.6	14.9	19.7	328.26
Pepper	1.5	1.7	2.4	60.00
Rubber	0.8	0.6	1	25.00
Nutmeg	1.5	3.3	4.8	220.00
Vegetables	3.1	11.6	17.3	458.06
Cocoa	0	0	0.5	……

Source : Primary Field Survey

Net Area Sown under different crops exists only in Marginal lands in Pazhayannur which meant that area under cultivation is of the size less than 1 Hectares. Net Area Sown under Paddy Cultivation declined in Pazhayannur from 39.7 percent in Phase I to 11.1 percent in Phase III and the Growth Rate is -72.04 which depicted that the Net Area Sown is showing a negative trend. The area under Coconut also showed a decreasing trend from 28.2 percent in Phase I to 24.5 percent in Phase III showing a decreasing growth rate of -13.12 percent. The cultivation of Plantain increased sharply from 4.6 to 19.7 percent with a growth rate of 328.26 percent Growth rate of different crops cultivated in Pazhayannur is given in Figure 6.2

Figure 6.2

Growth rate of crops in Pazhayannur



The Cost and Revenue analysis of different crops cultivated in three phases in Pazhayannur is given in Table 6.9.

Table 6.9

Cost and Revenue analysis of Net Area Sown in Pazhayannur

Crops	Phases	Price	Yield/Hect	Total Cost	Total Revenue	Profit/ Hect	Reasons
Paddy	Phase I	8.06	898.64	1620.00	7239.57	5619.57	Decreased Yield
	Phase II	9.34	942.16	3645.00	8840.72	5195.72	
	Phase III	25.04	959.67	7395.65	24328.17	16932.52	
	Growth rate	210.84	6.79	356.52	236.04	201.31	
Coconut	Phase I	6.16	1985.59	5626.22	12235.38	6609.16	Decreased Yield
	Phase II	12.00	1983.69	6885.00	23804.28	16919.28	
	Phase III	15.06	1984.50	19440.00	29884.24	10444.24	
	Growth rate	144.38	-0.06	245.53	144.24	58.03	
Arecanut	Phase I	148.15	810.00	4860.00	120000.00	115140.00	Decreased Yield
	Phase II	294.29	810.00	8100.00	238371.43	230271.43	
	Phase III	339.87	805.85	11163.46	273998.08	262834.62	
	Growth rate	129.41	-0.51	129.70	128.33	128.27	
Plantain	Phase I	20.00	2430.00	6075.00	48600.00	42525.00	Increased Yield
	Phase II	29.63	2430.00	19755.00	72000.00	52245.00	
	Phase III	40.00	2430.00	20941.46	97200.00	76258.54	
	Growth rate	100.00	0.00	244.72	100.00	79.33	
Pepper	Phase I	90.00	668.25	6277.50	60142.50	53865.00	Increased Yield
	Phase II	106.67	729.00	6075.00	77625.00	71550.00	
	Phase III	135.00	777.60	10530.00	104976.00	94446.00	
	Growth rate	50.00	16.36	67.74	74.55	75.34	
Rubber	Phase I	225.00	648.00	28350.00	145800.00	117450.00	Decreased Yield
	Phase II	175.00	648.00	36450.00	113400.00	76950.00	
	Phase III	125.00	607.50	60750.00	75937.50	15187.50	
	Growth rate	-44.44	-6.25	114.29	-47.92	-87.07	
Nutmeg	Phase I	100.00	810.00	6480.00	81000.00	74520.00	Increased Yield
	Phase II	230.00	850.50	8100.00	195615.00	187515.00	
	Phase III	345.00	846.45	17212.50	292025.25	274812.75	
	Growth rate	245.00	4.50	165.63	260.53	268.78	
Vegetables	Phase I	10.00	2227.50	6075.00	22275.00	16200.00	Increased Yield
	Phase II	20.00	2835.00	24300.00	56700.00	32400.00	
	Phase III	30.00	2823.75	16425.00	84712.50	68287.50	
	Growth rate	200.00	26.77	170.37	280.30	321.53	
Vanilla	Phase III	50.00	2835.00	16200.00	141750.00	125550.00	----
	Growth rate	----	----	----	----	----	

Source : Primary Field Survey

Cultivation of all except Paddy and Rubber crops showed an increasing trend and Net Area Sown under vegetable cultivation increased at an increasing rate. Since Pazhayannur is considered as a Special Agricultural Zone for vegetables and vegetable cultivation is promoted through agricultural institutions such as Kerala Agricultural

University through provision of seeds, seedlings, micro irrigation facilities and productivity enhancement programmes.

The Land Utilisation pattern of Venkitangu (Lowlands) and Kuzhalmannam (Midlands) is extremely different from the cropping pattern of Kodassery, Pazhayannur and Agali as Diversification is not possible due to the existing topography and paddy is an exclusive crop in the area which is represented in Table 6.10

Table 6.10.

Utilisation of Net Area Sown – Venkitangu and Kuzhalmannam

Panchayat	Crops	Marginal	Small	Semi-Medium	Medium
Venkitangu	Paddy	51.7	21.7	18.3	8.3
Kuzhalmannam	Paddy	73.7	25.0	1.7	0.0

Source : Primary Field Survey

Since Venkitangu is a lowland, no transformation or conversion exists in the land as no other crop can be preferred due to the existence of characteristics of wetland. No other crops except paddy can be cultivated in the Net Area Sown in Lowlands. 51.7 percent land is Marginal with less than 1 Hectares, 21.7 percent Small sized, 18.3 percent Semi-Medium and 8.3 percent Net Area Sown is Medium sized land.

No variations exist in Net Area Sown in three different phases in Venkitangu. In Kuzhalmannam which belongs to Midlands, 73.7 percent of Net Area Sown under Paddy Cultivation is Marginal land, 25.0 percent is Small and 1.7 percent is Semi- Medium land. The main crop cultivated is paddy with different varieties of paddy itself such as Jyothi, Uma, Rohini, Ponni, Swetha, Matta Thriveni and Ponni IR-8. All the crops are different High Yielding Dwarf Varieties of paddy which were genetically created out of the traditional seeds. All the seeds take the Medium or Short Term Duration for production ranging from around 100 to 120 days and moderately tolerant to Brown Plant Hoppers in which Uma and Jyothi is special for Kole lands. Uma is also special for cultivation of additional crop season of Kolelands.

The cost and revenue analysis of crops cultivated especially paddy cultivation in three phases in Venkitangu is given in Table 6.11.

Table 6.11

Cost and Revenue analysis of Paddy Cultivation- Venkitangu

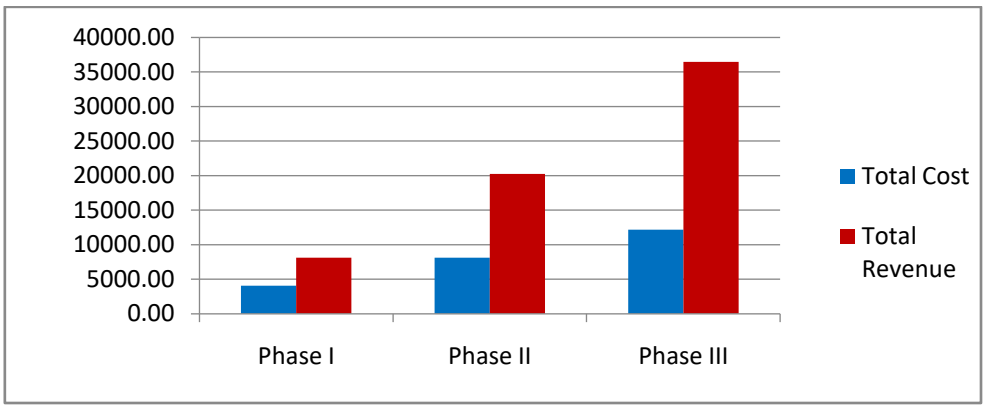
Phases	Price	Yield/ Hectare	Total Cost	Total Revenue	Profit/ Hectare
Phase I	10.00	810.00	4050.00	8100.00	4050.00
Phase II	20.00	1012.50	8100.00	20250.00	12150.00
Phase III	30.00	1215.00	12150.00	36450.00	24300.00
Growth Rate	200.00	50.00	200.00	350.00	500.00

Source : Primary Field Survey

In Venkitangu, the cost and revenue of paddy in three phases reflects the fact that price of paddy is increasing, cost is increasing at a faster rate while the yield per hectare has been increased due to application of fertilisers – both bio and permitted chemical fertilisers with the help and co-ordination of Padasekharasamiti. Total Cost of production also increased due to increased labour cost, increased cost of machinery and cost of marketing facilities. Whatever is left out as profit after meeting the expenses is also attractive and the main incentive to continue in the agricultural production is that the farmers have no effort or require no labour effort to cultivate in the land as the Net Area Sown is completely cultivated with the guidance of Padasekharasamitis. No conversion is possible in the Net Area Sown due to Kerala Conservation of Paddy and Wetland Act, 2008 which was later amended – Kerala Conservation of Paddy and Wetland Bill 2011. Cost and Revenue of Paddy Cultivation in Venkitangu Panchayat is given in Figure 6.3

Figure 6.3.

Cost and Revenue analysis of Paddy Cultivation - Venkitangu



Agali in Highlands concentrated mainly in production of pulses and the utilisation pattern of Net Area Sown in Agali is distinguishable with the cultivation of a number of crops such as coconut, Arecanut, Plantain, Cholam, Ragi, Kadala, Vanpayar, Thuvara,

Thina, Chama, Muthira, Veragu, Bajra, Green Beans, Gorundnut and Sugarcane which is represented in Table 6.12.

Table 6.12

Utilisation of Net Area Sown- Agali

Crops	Marginal			Small			Semi-Medium			Medium		
	I	II	III	I	II	III	I	II	III	I	II	III
Coconut	5.2	6.4	7.7	2.00	1.1	2.9	0.0	0.0	2.0	100	100	0.0
Arecanut	1.7	1.6	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0
Plantain	19.1	12.8	7.7	12.2	21.8	19.4	23.8	27.8	29.4	0.0	0.0	0.0
Cholam	13.0	14.4	16.7	18.4	17.2	14.6	9.5	5.6	13.7	0.0	0.0	0.0
Ragi	17.4	19.2	16.7	16.3	13.8	16.5	14.3	16.7	17.6	0.0	0.0	0.0
Kadala	1.7	5.6	3.8	4.1	0.0	1.9	0.0	0.0	2.0	0.0	0.0	0.0
Vanpayar	5.2	2.4	2.6	2.0	5.7	6.8	0.0	5.6	0.0	0.0	0.0	0.0
Thuvara	7.0	8.8	11.5	7.1	4.6	5.8	4.8	11.1	3.9	0.0	0.0	0.0
Thina	7.8	9.6	6.4	10.2	8.0	8.7	14.3	5.6	11.8	0.0	0.0	0.0
Chama	9.6	42.3	15.4	13.3	46.2	7.8	9.5	11.5	11.8	0.0	0.0	0.0
Amara	0.9	0.0	0.0	2.0	3.4	2.9	9.5	0.0	0.0	0.0	0.0	0.0
Muthira	3.5	4.0	3.8	7.1	3.4	8.7	0.0	0.0	0.0	0.0	0.0	0.0
Veragu	2.6	3.2	1.3	4.1	5.7	7.8	0.0	5.6	5.9	0.0	0.0	0.0
Bajra	0.9	0.0	0.0	1.0	0.0	1.0	0.0	5.6	5.6	0.0	0.0	0.0
Green Beans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6	5.7	0.0	0.0	0.0
Groundnut	2.6	2.4	0.0	0.0	0.0	2.9	4.8	0.0	0.0	0.0	0.0	0.0
Sugarcane	1.7	0.8	0.0	0.0	1.1	1.9	0.0	0.0	0.0	0.0	0.0	0.0

Source : Primary Field Survey

In Phase I, a major proportion of land was used for production of Plantain, followed by Ragi, Cholam, Chama, Thina, and Thuvara and almost the same cropping pattern with same crops were cultivated in the Net Area Sown in Phase II and Phase III. The farmers who cultivated coconut owned Medium sized land and the land under coconut decreased due to the attack of Malabar Giant Squirrel. The areal-wise cultivation of Plantain increased due to increasing prices but the cultivators always faced the problem of

attack of wild animals. The farmers of Agali mainly concentrated upon the production of pulses as pulses was the staple food of Agali at a time and have been diverting towards rice which is obtained through Public Distribution System.

Table 6.13

Cost and Revenue analysis of Pulses – Agali

Crops	Phases	Price	Yield/ Hectare	Total Cost	Total Revenue	Profit/ Hectare	Reasons
Pulses	Phase I	8.97	1252.94	2233.80	10552.73	8318.93	Destruction by wild animals Increasing irrigation cost
	Phase II	19.34	1087.58	6853.34	20312.31	13458.96	
	Phase III	30.49	1114.25	9196.29	32657.93	23461.64	
	Growth Rate	240.08	-11.07	311.69	209.47	182.03	
Plantain	Phase I	20.00	2419.62	8100.00	47976.92	39876.92	
	Phase II	29.63	2073.09	18569.25	61180.31	42611.06	
	Phase III	39.63	2134.84	25287.80	84410.89	59123.09	
	Growth rate	98.17	-11.77	212.20	75.94	48.26	

Source : Primary Field Survey

In Agali, price of Pulses and Plantain increased while the yield per hectare decreased due to destruction by wild animals and increased cost of irrigation. Though Bhavani river is flowing through Agali as the main source of irrigation, variations in altitude in the area is itself a bottleneck for production due to increased irrigation cost which mainly arises from cost of motor pumpsets for irrigation. By the traditional system of cultivation, tribals have to keep mandatorily a portion of their harvest for animals and birds and a certain proportion for the relatives. Though the two traditional customs are going on, the tribals faced attack of the Net Area Sown by Wild animals especially, herd of elephants, Boars and Bisons. The growth rate of price for pulses is 240.08 percent which is acceptable by farmers while the yield per hectare decreased by 11.07 percent, total cost also increased, Total Revenue and Profit also increased to 311.69 percent, 209.47 percent and 182.03 percent respectively out of which increase in cost is the highest growth rate. The same is in the production of plantain also with highest growth rate in cost of production with 212.20 percent and lowest in yield per hectare with -11.77 percent, growth rate in profit also exists low when compared to other concepts. The price fluctuations in the crops cultivated is necessary while considering the net area sown in different phases. Price of some crops showed an increased trend while some showed a decreasing trend. The Price fluctuations in three Phases I, II and III is given in Table 6.14.

Table 6.14

Price Fluctuations in crops cultivated in Three Phases

	CROPS	Phase I	Phase II	Phase III	Phase I to Phase II	Phase II to Phase III
1	Paddy	9.21	16.52	27.94	79.43	69.14
2	Coconut	6.16	12.17	15.58	97.70	28.02
3	Arecanut	138.97	289.19	333.05	108.10	15.17
4	Plantain	20.00	29.84	39.98	49.19	33.99
5	Pepper	90.00	106.67	135.00	18.52	26.56
6	Rubber	225.00	175.00	147.50	-22.22	-15.71
7	Nutmeg	100.00	232.20	338.30	132.20	45.69
8	Tapioca	6.00	12.60	15.00	110.00	19.05
9	Vegetables	10.00	20.00	30.00	100.00	50.00
10	Cholam	11.80	180.00	240.00	1425.42	33.33
11	Ragi	5.46	15.29	50.00	180.03	226.92
12	Kadala	15.00	20.18	30.69	34.53	52.06
13	Vanpayar	10.00	20.00	27.03	100.00	35.13
14	Thuvara	8.00	15.00	30.00	87.50	100.00
15	Thina	8.00	20.00	21.22	150.00	6.11
16	Chama	9.73	17.15	30.00	76.24	74.93
17	Amara	8.00	19.81	23.60	147.60	19.15
18	Muthira	9.82	15.00	39.69	52.78	164.62
19	Veragu	10.00	40.00	25.00	300.00	-37.50
20	Groundnut	5.33	20.00	40.00	275.00	100.00
21	Sugarcane	10.00	10.00	36.80	0.00	268.00
22	Bajra	6.50	15.00	20.00	130.77	33.33
23	Green Beans	8.00	21.00	20.00	162.50	-4.76

Source : Primary Field Survey

Except the pulses, the price of paddy showed the highest increase in three phases, followed by vegetables, nutmeg and coconut in second, third and fourth positions. The growth rate of price is negative for rubber in both Phase I and Phase II with -22.22 and -15.71 respectively. The Cropping Pattern by farmers in the physiological zones with preference to the different categories of Net Area Sown is given in Table 6.15

Table 6.15.

Cropping Pattern by farmers in Physiological Zones.

Sl.No	Crops	Lowland		Midland		Highland		Total	
1	Paddy	60	(100.0)	83	(31.0)	0	(0.0)	143	(20.6)
2	Coconut	0	(0.0)	51	(19.0)	48	(13.1)	99	(14.2)
3	Arecanut	0	(0.0)	39	(14.6)	2	(0.5)	41	(5.9)
4	Plantain	0	(0.0)	41	(15.3)	67	(18.3)	108	(15.5
5	Pepper	0	(0.0)	5	(1.9)	0	(0.0)	5	(0.7)
6	Rubber	0	(0.0)	2	(0.7)	7	(1.9)	9	(1.3)
7	Nutmeg	0	(0.0)	10	(3.7)	45	(12.3)	55	(7.9)
8	Tapioca	0	(0.0)	0	(0.0)	10	(2.7)	10	(1.4)
9	Vegetables	0	(0.0)	36	(13.4)	3	(0.8)	39	(5.6)
10	Cocoa	0	(0.0)	0	(0.0)	2	(0.5)	2	(0.3)
11	Vanilla	0	(0.0)	1	(0.4)	0	(0.0)	1	(0.1)
12	Cholam	0	(0.0)	0	(0.0)	35	(9.5)	35	(5.0)
13	Ragi	0	(0.0)	0	(0.0)	41	(11.2)	41	(5.9)
14	Kadala	0	(0.0)	0	(0.0)	6	(1.6)	6	(0.9)
15	Vanpayar	0	(0.0)	0	(0.0)	10	(2.7)	10	(1.4)
16	Thuvara	0	(0.0)	0	(0.0)	18	(4.9)	18	(2.6)
17	Thina	0	(0.0)	0	(0.0)	20	(5.4)	20	(2.9)
18	Chama	0	(0.0)	0	(0.0)	27	(7.4)	27	(3.9)
19	Amara	0	(0.0)	0	(0.0)	3	(0.8)	3	(0.4)
20	Muthira	0	(0.0)	0	(0.0)	8	(2.2)	8	(1.2)
21	Veragu	0	(0.0)	0	(0.0)	9	(2.5)	9	(1.3)
22	Groundnut	0	(0.0)	0	(0.0)	3	(0.8)	3	(0.4)
23	Sugarcane	0	(0.0)	0	(0.0)	2	(0.5)	2	(0.3)
24	Green Beans	0	(0.0)	0	(0.0)	1	(0.3)	1	(0.1)

Source : Primary Field Survey

The type of farming preferred by farmers in the study area can be categorized mainly as Crop rotation, Multiple farming and Single farming systems. Crop rotation refers to cultivation of different types of crops in the sequence of growing seasons without keeping the land fallow throughout the agricultural year. It lessens the plant diseases and strengthens the soil health. Multiple Cropping refers to cultivating more than one crop in the same land in a single growing season. Single farming refers to growing a single crop in the area in the growing season. The three systems along with the preference of livestock farming in different categories of Net Area Sown is given in Table 6.16

Table 6.16

Type of Farming preferred by Farmers

Net Area Sown	Crop Rotation	Multiple Farming	Single Farming	Livestock Farming
Marginal	53.0	76.2	28.7	34.8
Small	61.3	74.2	25.8	45.2
Semi-Medium	73.8	73.8	26.2	78.6
Medium	81.2	81.2	18.8	84.4
Total	60.7	76.0	26.7	48.3

Source : Primary Field Survey

The Multiple farming system is prefered by majority of farmers followed by crop rotation and Single farming system with 76.2 percent, 53.0 percent and 28.7 percent respectively. Single farming system is preferred by farmers of Lowlands, while farmers in Midlands and Highlands preferred Crop rotation and Multiple farming. Compared to Marginal sized lands, Crop rotation and Multiple farming is preferred by Semi- Medium and Medium sized land owned farmers. Since crop rotation and multiple farming is largely preferred in large sized farms, the income derived is also high in the categories. The size of farm is very much dependent upon the cropping system and small sized farms have its own limitations in application of Crop rotation and Multiple farming.

6.4. Other factors influencing Net Area Sown

Socio - Demographic and Socio- Economic factors are influencing the Net Area Sown directly and has a direct impact on the Net Area Sown. The factors other than Demographic and Economic factors which are influencing the Net Area Sown used by farmers in the selected area are considered as the Neighbourhood and Social factors.

The Neighbourhood factors are the factors which are influencing the Net Area Sown from the neighbourhood land and the purposes for which the neighbourhood land is used while the Social Factors are the factors which arise from the society itself and influence the Net Area Sown used by farmers in the study area.

Neighbourhood factors are considered as one of the most important driving forces influencing the Net Area Sown. Neighbourhood Factors that will be influencing Net Area

Sown were identified as Agricultural land itself, Construction of Villas, Construction of homes for entire family within a particular area, Construction of Roads, Co-operative farming and Consolidation of Holdings. in the opinion of farmers. The farmers who owned different categories of Net Area Sown opined in different ways regarding the Neighbourhood factors as is represented in Table 6.17.

Table 6.17

Neighbourhood Factors affecting Net Area Sown

Neighbourhood Factors	Marginal		Small		Semi-Medium		Medium		Total	
Agricultural Land Itself	152	(92.7)	61	(98.4)	42	(100)	32	(100)	287	(95.7)
Construction of Villas	16	(9.8)	9	(14.5)	29	(69.0)	26	(81.2)	80	(26.7)
Construction of homes for entire family within a particular area	16	(9.8)	9	(14.5)	30	(71.4)	26	(81.2)	81	(27.0)
Construction of Roads	11	(6.7)	2	(3.2)	0	(0.0)	0	(0.0)	13	(4.3)
Co-operative farming	30	(18.3)	17	(27.4)	41	(97.6)	32	(100)	120	(40.0)
Consolidation of Holdings	30	(18.3)	17	(27.4)	41	(97.6)	32	(100)	120	(40.0)

Source : Primary Field Survey

The most important neighbourhood factor which influenced the farmers in utilisation of Net Area Sown is the agricultural land itself. The neighbouring agricultural land influenced the farmers in conversion of land as well as in substitution of land for other high valued, cost effective, less water- sensitive and less climate vulnerable crops. In Kodassery, the main reason for conversion of crops from paddy to other crops is the neighborhood agricultural land itself, the slippery sand which is not suitable for application of machinery such as Sowing and Harvesting Machines and increasing labour cost. As the neighbouring Net Area Sown was converted, irrigation facilities were also blocked in the area. In Venkitangu, the co-operative farming and consolidation of holdings were helpful to earn a reasonable income with application of Sowing and Harvesting machines for large scale farming. All the neighbourhood factors more or less are influencing the Net Area Sown and the significance level of Neighbourhood factors on Net Area Sown is tested with the application of Chi- square test. The Hypothesis to analyse the association between Neighbourhood factors and Net Area Sown is given as

H_1:There exists association between Neighbourhood factors and Net Area Sown.

The association between Neighbourhood factors and Net Area Sown is tested and significance level is given in Table 6.18.

Table 6.18

Significance of Neighbourhood Factors on Net Area Sown

Neighbourhood Factors	Chi-Square value	Df	Significance level
Agricultural Land itself	7.981	3	0.04
Construction of Villas	115.992	3	0.00
Construction of homes for entire family	119.488	3	0.00
Co-operative Farming	142.387	3	0.00
Consolidation of Holdings	142.387	3	0.00

Source : Primary Field Survey

The association between the Neighbourhood factors and Net Area Sown is analysed and interpreted using the Chi-square values and Significance level. The critical value of χ^2 with 3 degrees of freedom at 5 percent level of significance equals 7.981, 115.992, 119.488, 142.387 and 142.387 respectively for the Neighbourhood factors such as Agricultural land itself, Construction of Villas, Construction of homes for entire family within a particular area, Construction of Roads, Co-operative farming and Consolidation of Holdings. Since the sample value of χ^2 is greater than the critical value, the null hypothesis is rejected and there exists significant association between the Neighbourhood factors and Net Area Sown.

The Social factors also influence the Net Area Sown as the land utilised may be influenced by the factors within the society as human beings are social living beings who are linked to the society or a group. The social factors which influence the Net Area Sown is considered as Changes in way of life, Education and Search for white collar jobs, Development of infrastructure, Decreasing size of land, Increasing population, Urbanisation and Changing customs and traditions. The factors are ranked and analysed as given in Table 6.19.

Table 6.19

Influence of Social Factors

Social Factors	1	2	3	4	5	6	7	Median Rank
Changes in way of life	0.6	2.3	59.1	32.3	2.3	0.3	0.3	I
Education and Search for White Collar Jobs	39.3	16.9	1.6	1.6	37.3	0.6	0.3	II
Development of infrastructure	58.2	16.6	1.9	1.3	19.8	1.3	0.3	III
Decreasing Size of land	0.3	0.3	20.8	57.5	13.3	3.6	1.6	IV
Increasing Population	0.3	39.6	13.0	2.3	22.1	0.6	19.5	V
Urbanisation	0.3	1.9	0.6	0.6	2.3	85.7	5.5	VI
Changing Customs and Traditions	0.3	19.5	0.3	1.3	0.6	5.2	69.8	VII

Source : Primary Field Survey

Ranks preferred by farmers for factors are consolidated by percentage method and further ranked using Median, a measure of Central Tendency representing the average value of given data. In the opinion of farmers, Changes in way of life ranked first, followed by Education and Search for white collar jobs, Development of infrastructure, Decreasing size of land, Increasing population, Urbanisation and Changing customs and traditions. Most important social factors influencing the Net Area Sown are Changes in way of life and Education and Search for White Collar Jobs. Customs and traditions as a social factor has less influence on the Net Area Sown as many preferred it as the last social factor influencing Net Area Sown. All the factors influenced the farmers who cultivated in the Net Area Sown.

6.5. Initiatives taken by Farmers

Farmers perception towards the Net Area Sown is also dependent upon the initiatives taken to improve the organic content of soil. The initiatives taken by farmer is related to the preferences towards Bio – fertilisers, Chemical fertilisers and application of both Fertilisers in the Net Area Sown. The initiatives taken by farmers to improve organic content, how the organic content of the Soil is improved in different land size categories is given in Table 6.20

Table 6.20
Initiatives taken by farmers

Net Area Sown	Initiatives to improve organic content		Initiatives by farmers		
	Yes	No	Biofertilisers	Chemical Fertilisers	Both Fertilisers
Marginal	72	28.0	32.9	0.0	67.1
Small	62.9	37.1	30.6	1.7	67.7
Semi-Medium	54.8	45.2	21.4	0.0	78.6
Medium	31.2	68.8	21.9	0.0	78.1
Total	63.3	36.7	29.7	0.3	70.0

Source : Primary Field Survey

Initiatives were taken by farmers to improve organic content of land in Marginal and Small holdings while less initiatives were taken by farmers who owned Semi- medium and Medium sized Net Area Sown. In the Marginal sized lands, 72 percent farmers took initiatives to improve the organic content in soil, while 62.9 percent, 54.8 percent, 31.2 percent farmers took initiative to improve organic content in soil in Small, Semi-Medium and Medium sized Net Area Sown in the selected area. 21 to 32 percent respondents used Bio- fertilisers and 67 to 78 percent used both fertilisers by restricting the chemical fertilisers to the sanctioned limit. Many of the farmer respondents are not interested in using Chemical fertilisers which is harmful to the human well being and become a helping hand for the people to live a healthy living.

6.6. Initiatives taken by Institutions

Institutions belonging to Central Government and State Government are playing an important role in promoting agriculture. Krishi Bhavan, Agricultural University, Paadasekharasamiti and Soil Conservation Board are the institutions through which farmers Krishi Bhavan helps in formulation and implementation of State Government programmes to improve food crop and non- food crop in the Net Area Sown.

Agricultural University is an expertise in the provision of skill, technology, encompassing production activities, education, training and research for the people who are interested in agricultural activities. Paadasekharasamiti was introduced as an intiative for facilitating group farming and enhance production through cost effective techniques. Soil Conservation Board was initiated to make a proper conservation and management of the precious soil and water resources. Farmer respondents attained the benefits and initiatives of institutions as depicted in Table 6.20.

Table 6.21

Initiatives taken by institutions

Physiological Zones	Krishi Bhavan	Agricultural University	Padasekharasamiti	Soil Conservation Board
Marginal	40.9	45.1	36.0	31.1
Small	51.6	41.9	37.1	38.7
Semi-Medium	59.6	42.9	26.2	42.9
Medium	59.4	40.6	18.8	40.6
Total	47.7	43.7	33.0	35.3

Source : Primary Field Survey

Among the respondents, 47.7 percent attained benefits from Krishi Bhavan, 43.7 percent from Agricultural University, 33.0 percent from Padasekharasamiti and 35.3 percent from Soil Conservation Board. 59.6 and 59.4 percent farmers who cultivated Semi-Medium and Medium sized land attained the benefits provided by Krishi Bhavan, 45.1 percent farmers who cultivated Marginal sized lands benefited from Agricultural University, 36.0 percent respondents from Marginal sized and 37.1 percent from Small sized lands benefitted by Padasekharasamiti, 42.9 and 40.6 percent benefittedfrom Semi-Medium and Medium sized land. The Padasekharasamiti in Venkitangu and Pazhayannur took initiatives in providing sowing and harvesting machines, power motors for irrigation, warehousing and acts as a marketing agent for wholesale procurement of paddy. Since Net Area Sown in lowlands are consolidated, co-operative farming is possible and all the agricultural activities were done in large scale which is cost effective for the farmer.

6.7. Government initiatives for protection of Net Area Sown

The Government policy implementations such as influence of Government policies especially Agricultural Policies, Zoning Regulations Act and Protection of agricultural land affect the Net Area Sown. Agricultural policies aimed at ensuring sufficient income for farmers along with sustainable development, Protection of Ramsar sites which are protected areas under agricultural heritage, protection of farmland and Provision of pumping subsidies. Zoning Regulations were implemented for protection of the land especially through Kerala Conservation of Paddy-land and Wetland Act 2008. Protection of agricultural land is done with group farming through Padasekharasamitis and provision of organic farming. The satisfaction level of farmers towards government intitiatives for protection of agricultural land is given in Table 6.21.

Table 6.22

Satisfaction level of farmers towards Government Initiatives for protection of Net Area Sown

Net Area Sown	Influence of Govt Policies	Zoning Regulations	Protection of Agricultural Land
Marginal	73.2	95.7	62.8
Small	80.6	95.2	64.5
Semi-Medium	90.5	100	59.5
Medium	65.5	100	59.4
Total	76.3	96.7	62.3

Source : Primary Field Survey

Among the respondents, 96.7 percent is satisfied with zoning regulations, 76.3 percent satisfied with Government policies especially agricultural policies and 62.3 percent satisfied with the initiatives taken by Government for protection of agricultural land. Majority of farmers are satisfied with Government initiatives for protection of Net Area Sown. All the respondents are satisfied with zoning regulations which provide restrictions on conversion of paddy land and wetland as zoning regulations mainly took place in Lowlands. The protection of agricultural land in Lowlands became necessary as the Lowlands act as the rice bowls for the state. Since the respondents in Lowlands favoured agriculture as agriculture was considered as the main source of income with certain profit. Actually agriculture was considered as a profitable occupation for the respondents. The 62.8 percent respondents who cultivated marginal lands and 64.5 respondents who cultivated in Small lands demanded protection of agricultural land while 73.2 percent from marginal and 80.6 percent from Small land were satisfied with the influence of Government policies especially the Agricultural policy.

Farmers have many suggestions regarding the initiatives to be taken by Government to support and help them to continue with agricultural activities. The suggestions that were put forward by the farmers were conducting motivation classes for younger generations, provision of subsidies for agricultural products and fertilisers, Issue of Kisan Credit Cards in order to get the benefits without any intermediaries and appointment of Agricultural Co-ordinators to get a perfect awareness about the agricultural situation and benefits through which a perfect knowledge about agriculture is available to them.

Table 6.23

Initiatives to be taken by Government

Net Area Sown	Motivation Classes for younger generations	Provision for subsidies	Issue of Kissan Credit Cards	Appointment of Agri.Co-ordinators
Marginal	23.2	26.2	23.2	27.4
Small	17.7	22.6	29.0	30.6
Semi-Medium	23.8	21.4	26.2	28.6
Medium	37.5	37.5	9.4	15.6
Total	23.7	26.0	23.3	27.0

Source : Primary Field Survey

Among the respondents, 27.0 percent favoured appointment of agricultural co-ordinators, 26.0 percent favoured provision of subsidies, 23.7 percent favoured motivational classes and 23.3 favoured suggested issue of Kissan Credit Cards. Kissan Credit cards were favoured in order to avail the subsidies provided by state and central Governments. The farmers who cultivated in all categories of lands were of the opinion that the motivation classes, provision of subsidies, issue of Kissan Credit Cards and appointment of Agricultural Co-ordinators is necessary for the agricultural development. In the family of respondents, young people were not interested in continuing agriculture or work within the fields as the white collar jobs as a result of high educational qualification is available to them and the particular jobs provided a higher income to them without much physical stress and they failed to realize the mental stress out of the white collar jobs. The risk arising out of agriculture due to climatic changes and plant diseases is solved through provision of subsidies though a time lag due to red tapism. The farmers suggested the initiatives to be taken by Government in order to stay back safely in agricultural activities as they cannot think of any other job and the respondents are very much attached to the land they owned and cultivated.

6.8. Conclusion

Dynamics of Net Area Sown in different phases is analysed on the basis of area, price, cost, yield and revenue of the crops cultivated. Land use pattern in Net Area Sown gives the true picture of the existing system of agriculture and how the farmers are utilising the land in the most effective manner by cultivating maximum possible number of crops. The farmers are thus adopting risk adaptation strategies of their own and in that way, if one crop is affected by any specific reasons, revenue from other crop will be compensating the variation of income.