Shijitha M. "Land use pattern in Kerala." Thesis. Research and Post Graduate Department of Economics, St. Thomas' College (Autonomous), Thrissur, University of Calicut, 2021.

CHAPTER IV
PROFILE OF STUDY AREA

4.1. Introduction

Kerala comprises only 1.8 per cent of the total geographical area of our country, but 2.76 per cent of the total Indian population. Kerala, being the 'Spice Garden of India' gives priority to the agricultural sector and Out of the total geographical area of 3886257 hectares of Kerala Economy, the forest area together with the net sown area occupies 85 per cent, which is greater than three- forths of the total area. Analyzing the growth trends of the land use pattern, variations can be seen in the land used for non- agricultural purposes, especially in the net sown area. While analyzing the periods from 1995 to 2018, the proportion of land used for non- agricultural purposes are showing a positive upward trend while the proportion of net sown area shows a downward moving negative trend. Changes in land use pattern in Kerala may be due to i) population pressures and emerging lifestyles ii) area under forest dwindled due to expansion of plantations, river valley projects, encroachment of farmers into forest lands etc iii) more land is kept fallow as a consequence of rise in cost of cultivation of traditional crops. Rising cost of cultivation, stagnating rice prices and alternative uses of paddy lands were the main reasons for the declining trend of the cropped area. (OmanaCheriyan, 2004).
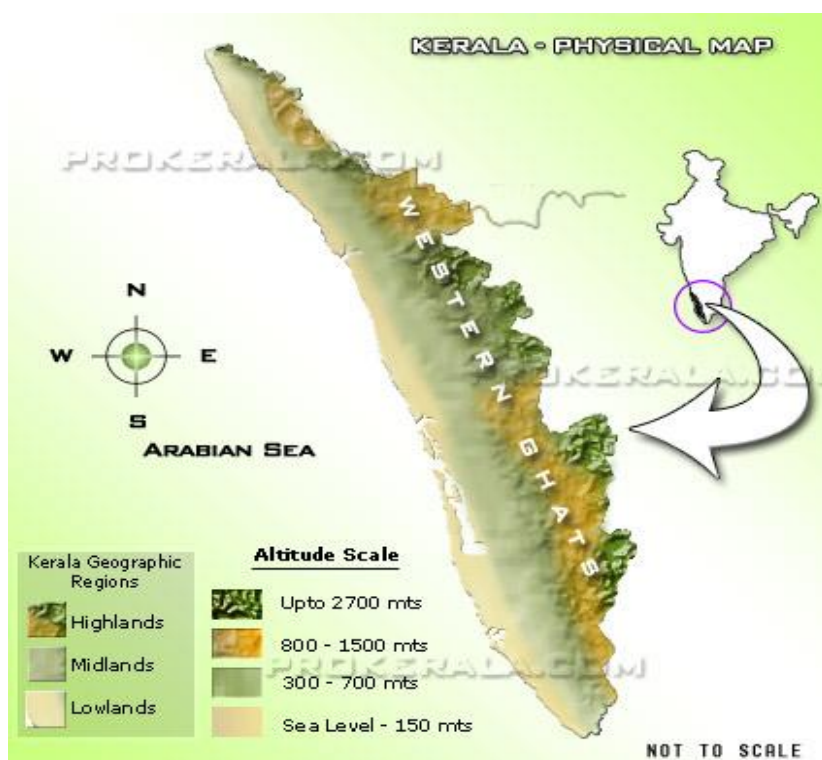
4.2. Physiological Zones in Kerala

Agriculture is a seasonal economic activity and productivity of crops is dependent upon the climatic and geographic features of particular area. Division of the Total Geographical Area into three climatically distinct and parallel physiographic zones is necessary to know about variations in the land use especially the Net Area Sown in Kerala. For the particular purpose, Kerala is divided into the physiological zones which include

i)   Eastern Highlands(Rugged and cool mountainous terrain) include the steeply sloping areas with 41 out of 44 rivers flowing from Western Ghats enriching Kerala and providing proper and natural irrigation.

ii)   The Central Midlands(Rolling Hills) include not much steep hills and wide rivers along with ribbon valleys. The ribbon valleys with laterite terrains are suitable for paddy cultivation and hill tops are suitable for plantain and cash crops.

iii)   Western Lowlands(also called as Coastal Area or Wetlands) with sandy stretches is suitable for extensive paddy fields , thick groves of coconut trees along backwaters crisscrossed with a network of canals and rivers. Area under Kole land paddy cultivation lies below sea level in the region.

Figure 4.1

Physiological Climatic Zones of Kerala

Source: Resource Atlas, Centre for Earth Science Studies, TVM.

Table 4.1

Physiological zones in Kerala

Zones	Altitude(m)	Total Area (km)	Area(%)	Soil	Temperature	Rainfall
Lowland	0-7.5	3979.3	10.24	Coastal Alluvium	30^0	1250 mm
Midland	7.5 - 75	16231.2	41.76	Laterite/ Red soil	32^0	3000 mm
Highland	>75 m	18653.5	48	Forest Loam	20^0	5000mm

Source: Ministry of Agriculture, Government of Kerala

Classification of Total Geographical Area of Kerala specifies that about 10.24 percent belongs to Lowland which is identified as alluvial plains (Kole lands) and sandy stretches with extensive paddy fields and coconut trees, 41.76 percent belongs to midland with paddy, coconut, arecanut, vegetables, plantains while 48 percent is Highlands which

includes forest area along with plantation crops. The altitude and slope of the land which is a determinant of topography is also a main factor for determining the selection of crops suitable for cultivation. The locational and altitudinal variations in Kerala is endowed with the specific and exclusive agro-ecological conditions (George P.S, 2001)

4.3. Profile of Study Area

The sample area for study is selected with the specification of Categorisation of Land Use Pattern and identifying the categorization for which major proportion of land is used. Identification of Net Area Sown as the important and major land use, the Districts with specific topographical features were identified and selected for the purpose. Palakkad was selected as the state occupying the leading position in Net Area Sown and the Number and Variety of crops cultivated especially millets and pulses. It also occupies a specific feature of Palakkad gap which makes it unique when compared to other districts. Thrissur District has leading position in productivity in the summer cultivation especially paddy cultivation which is done in lowlands or wetlands while occupies the second leading position in area utilised under summer paddy cultivation. Three Panchayats representing the largest Net Area Sown from each physiological zones in Thrissur District were selected – Venkitangu for Lowlands, Pazhayannur for Midlands, Kodassery for Highlands and two Panchayats representing the largest Net Area Sown from each physiological zones in Palakkad District were selected- Kuzhalmannam for Midlands, Agali for Highlands. The brief description of the selected area is necessary to understand the relevance of the particular study.

4.3.1. Palakkad:

Palakkad District locates between North Latitude10''20' and 11''14'' and East Longitude 76''02' and 76''54' and is bounded by Malappuram and Nilgiri Districts on the North, Coimbatore district in the East, Thrissur District on the South and Malappuram and Thrissur Districts on the West. It was called as 'Gateway of Kerala' as the district opens the gateway to the rest of the country through Palakkad Gap , the natural gap in 960 kms long Western Ghats on either side by Nilgiris and Anamalais which is the most influencing factor for its unique characteristics such as climate. The district enjoys both the climates of North- East and South-West Monsoon due to blowing of North East Wind.

4.3.1.1. Kuzhalmannam:

The word, 'Kuzhalmannam" is derived from Kuzhal represents flute and mannam represents slow. The panchayat is the Land of Black Palms and Paddy Fields which is the main cultivation of rural population. The soil is Black Cotton Soil which is suitable for cultivation and major portion of the area belongs to Midlands. Upto 1956, the cultivation was purely dependent upon rainfalls while from 1956 onwards, the Malampuzha Dam Left Bank Canal is the main source of irrigation for agricultural purposes. The main cultivations are Paddy, Coconut, Tapioca, Banana, Rubber and Pepper are the main crops cultivated while Cowpea and Vegetables are also cultivated in the region.

4.3.1.2. Agali:

Attappady lies between two ranges of Western Ghats which has the general slope towards the North East Area. From Mukkali to Anakkatty towards east, the elevation is between 500 m and 575 m which represents the features of Highland. The two major rivers, Bhavani and Siruvani which combine to form Cauveri river is the main source of irrigation for agricultural activities. Attappadi is classified into three panchayats for a better decentralized planning as Agali, Pudur and Sholayur. Around 51% of Attappady has an elevation between 600 m to 1000 m and 71.6% of the area has a slope between 15 to 30 degrees and receives much lower monsoon rainfall since it is located in the rain shadow as the mountain ranges separating valley from Mannarkad obstruct much of the rain bearing clouds, while the slopes facing the west and east receive heavy rainfall. The average rainfall varies from 794.87 mm at Agali to 794.98 mm at Pudur and a very high rainfall varying from 1574 mm at Sholayur to 2289.6 mm at Mukkali. The population consists of tribals who belong to three groups, Irulas, Mudugas and Kurumbas (Muraleedharan and Sankar 1991), all belong to broad group of Dravidians. Kurumbas exist only in Pudur, Irulas in Sholayur and in Agali, Irulas and Mudugas together contribute 50 hamlets. Irulas, the dominant tribe of Agali, are of Tamil Origin who was migrated due to great water scarcity from Coimbatore by the end of 16th century or the beginning of 17th century. Originally, they were doing shifting cultivation, but due to encroachments, they shifted to settled and plough cultivation. They cultivated millets such as makkacholam or maize(zea mays), ragi or fingure millet(Eleusine Coracana) and chama or little millet(Panicum

Miliaceum), pulses(like thuvara or red gram) and oil seeds(like groundnut or castor seed)(SanathananVelluva, 2006).

4.3.2. Thrissur

Thrissur District, the cultural capital of Kerala was formed on 1st July 1949, with headquarters ar Thrissur city. Paddy cultivation is the largest agricultural practice pursued by majority of the agricultural population. Tapioca, Coconut, Arecanut, Rubber, Cashew, Banana are other leading crops in the District. Tapioca, the second leading crop is cultivated due to high demand which arises from its calorific value. The low lying kole lands in Thrissur belongs to coastal wetlands which are protected and listed in Ramsar Site in 2002 as per Convention on Wetlands signed in Ramsar, Iran in 1971. It is a part of the largest wetland system which concentrates only on paddy cultivation in South-West Coast of Vembanad Kole with a network of natural channels and network canals.

4.3.2.1. Venkitangu

Venkitangu Panchayat is formed with area of 20.47 sq.km with largest Net Sown Area under kole cultivation in lowlands in Thrissur District. The method of cultivation followed by farmers is the same as that of kuttanad region. As a precaution for cultivation in high water levels, the farmers used seeds such as white pokkali and kuttadan for cultivation. White pokkali is the unique salt resistant variety which is suitable to grow in saltwater. Though October to May is the period of cultivation for paddy, some farmers are doing aquaculture in the high water levels upto October which is called as 'one fish, one rice' cultivation.

4.3.2.2. Pazhayannur:

Pazhayannur panchayat, formed in 1954 is located in Talappilly Tehsil of Thrissur District with 59.03 sq. kms. It has the unique feature of being the Special Agricultural Development Zone (SAZ) for Vegetables. Paddy, Cowpea, Tapioca, Yam, Turmeric, Ginger, Pepper, Plantain, Banana (Chengalikkodan) are the main crops cultivated in the area and a conversion is also seen from paddy and coconut to rubber cultivation.

4.3.2.3. Kodassery: Kodassery is a highland area with 9 mts above Sea Level in Mukundapuram Tehsil in Thrissur District, focuses mainly on agriculture and related activities and one of the leading producers of paddy cultivation in Kerala which is now in

a stage of negligence towards paddy cultivation. It is the only village in Kerala as well as India with 100 percent reservation for women. The highlands have a diversification in crops due to the regional differences and concentrated upon a number of crops than wetlands. The classification of selected panchayats into physiological and agro- ecological zones is represented in Table 4.2.

Table 4.2

Profile of the Study Area

Sl.No	Districts	Physio- Zone	Blocks	Panchayats	Agro-Eco Zones
1	Palakkad	Midland	Kuzhalmannam	Kuzhalmannam	Palakkad Plains
2		Highland	Attappadi	Agali	High ranges
3	Thrissur	Lowland	Mullassery	Venkitangu	Central Midlands
4		Midland	Pazhayannur	Pazhayannur	Malayoram
5		Highland	Irinjalakuda	Kodassery	Malayoram

Source :Kissan Kerala, Government of Kerala

The physiological features of the study area is relevant for the study as the land use as well as the cropping pattern is dependent upon the exclusive topology of land. Regional differences occur as the study area is distinguishable on the basis of Altitude, Rainfall, Soil type and Topology. The Agro- Ecological Zones representing the selected Panchayats are Palakkad Plains for Kuzhalmannam, Highranges for Agali, Central Midlands for Venkitangu, Malayoram for Pazhayannur and Kodassery on the basis of the Physiological features of the five sample panchayats which is given in Table 4.3.

Table 4.3.

The physiological features of Study area

Panchayats	Altitude	Rainfall	Soil Type	Topology
Kuzhalmannam	Type I*	Pattern II*	Red Loam	Model IIa*
Agali	Type II*	Pattern I & II	Red Loam	Model III*
Venkitangu	Type I	Pattern I & II	Laterite	Model II a*
Pazhayannur	Type I	Pattern I*	Lateritewithout B horizon (NH*)	Model III
Kodassery	Type I	Pattern I	Laterite without B horizon (NH)	Model III

Source :Kissan Kerala, Government of Kerala.

Note : * NH – Natural Highlands

Where *Type I – Altitude upto 500 m above MSL(Low altitude Zone, Hot Humid Tropics), Type II – More than 500 m above MSL, Pattern I – Both the South-West and

North- East Monsoon are active and moderately distributed South West Monsoon with June Maximum (Pazhayannur, Kodassery), Pattern II- Poorly distributed rainfall; Southwest Monsoon with July Maximum and concentrated in 3-4 months in North East Monsoon relatively weak(North of 110 N Latitude)(Kuzhalmannam), while both the monsoons are available in Agali and Venkitangu. Model II a- Less Extensive Valleys, Hills with moderate gradients, Slopes with mild gradients, Model III - Narrow valleys, Hills with steep gradients, Steep slopes. 90 percent of precipitation is during two monsoons – with 60 percent annual rainfall in June-Aug (Southwest) and 30 percent in Oct-Nov (Northeast). The main soil-type is Laterite and its variations especially with B horizon present and in Western Ghats with B horizon absent.

The Land Use Pattern in the study area revalidates the area under different purposes such as Wetlands, Drylands and other classifications which is represented in Table 4.4.

Table 4.4

Land Use Pattern in Study Area (Acres) - 2017-18

Land Use	Lowland	Proportion to TGA	Midland	Proportion to TGA	Highland	Proportion to TGA
Wetlands	2612.68	51.63	7762.6	35.25	2350.62	5.13
Drylands	2447.28	48.36	7558.83	34.32	36973.5	80.74
Puramboke	0	0	16.19	0.07	772.54	1.69
Forest	0	0	3035.45	13.78	5632.26	12.30
Fallow lands	0	0	0	0.00	61.82	0.14
Plantations	0	0	3648.79	16.57	0	0.00
Total Area	5059.96	100	22021.9	100.00	45790.8	100.00

Source: Directorate of Economics and Statistics, Govt of Kerala.

The Table depicts that in lowland, Wetlands contribute about 51.63 percent of Total Geographical Area while there exists no forest, fallow and plantations in the area. The Midlands which is a combination of Pazhayannur and Kuzhalmannam contain all the categories except fallow lands. Highlands of Agali and Kodassery together occupy 80.74 percent Drylands and only 5.13 percent wetlands. The important point to be highlighted is that all the lands have very little area kept as fallow lands reflecting the maximum utilisation of land. The size of land is larger in Highlands especially drylands than in Lowlands and Midlands. The Forest Area is also larger in Highlands than in other two physiological zones. Wetlands and Drylands occupy the major proportion of Total Geographical Area in Lowlands and Midlands. In Midlands, wetlands and drylands are

followed by Plantations and Forest Area while the Drylands occupy the major proportion of Total Geographical Area in Highlands with 80.74 percent, followed by Forests with 12.30 percent and so irrigation is necessary for Highlands which include Kodassery and Agali.

4.4. Profile of Sample Respondents

Direct assessment as well as observation of the study area is required in order to verify the details of secondary data which is an exact and appropriate design for the Field Survey and it may be conducted with the help of Primary Data collection from the specific survey. As a first-hand information, a pilot survey was conducted from farmers in different zones and open discussions were held with the officials of Land Use Board, Krishi Bhavan, Panchayat Offices and with the members of Padasekharasamitis and Karshakakoottayma. The particular discussions helped in selecting the sample respondents from the selected area in physiological zones.

The Panchayats were selected on the basis of Simple Random Sampling method with the largest Net Area Sown as the key indicator of Land Use in Kerala because Net Area Sown is the major land use in all the physiological zones in Kerala. The Sample farmer respondents were selected from the five panchayats, one Panchayat – Venkitangu represented as Lowlands, two panchayats - Pazhayannur, Kuzhalmannam together represented as Midlands and two Panchayats- Kodassery, Agali together represented as Highlands in further analysis. According to NSSO 70th Round Situation Assessment Survey of Agricultural Households in India, "Farmer is a person who possesses some land and is engaged in some agricultural activities on that land during last 365 days preceding the date of survey"(NSSO, 2013). The study area along with sample population from physiological zones is depicted in Table 4.5.

Table 4.5.

Selected Sample Panchayats, Population and Type of Land

Land Use	Panchayats	Frequency	Percent
Lowland	Venkitangu	60	20.0
Midland	Pazhayannur, Kuzhalmannam	120	40.0
Highland	Kodassery, Agali	120	40.0
Total		300	100.0

Source : Primary Field Survey

The table depicts that 20 percent respondents are selected from Lowlands, 40 percent from Midlands and 40 percent from Highlands corresponding to the Total Geographical area in Physiological zones in Kerala. The particular study identifies the factors influencing Agricultural Land Use on the basis of perception of 300 farmers selected from the sample area and engaged in agricultural activities.

The size distribution of land owned is necessary to know about temporal as well as spatial variations in land used by farmer respondents. The 7th Survey on Land and Livestock holdings which was conducted as a part of NSSO 70th Round during January – December 2013 distributed the size of land owned into different categories. The percentage distribution of area owned by farmers is expressed by categorizing on the basis of size of land owned into five categories as given in Table 4.6.

Table 4.6.

Distribution of Owned Land holdings

Category of owned land holding	Size of Holding
Marginal	More than 0.002 hectare and less than 1 hectares
Small	More than 1 hectare and less than 2 hectares
Semi-Medium	More than 2 hectare and less than 4 hectares
Medium	More than 4 hectare and less than 10 hectares
Large	More than 10 hectares

Source: NSSO, Land and Livestock Holdings Survey Report, 2013.

The farmers who own the land based on five categories of size of holdings is classified as – Marginal, Small, Semi-Medium, Medium and Large land in the study as it will be helpful for further comparisons. Land with a land size in between 0.002 and 1 Hectares are categorized as Marginal land while a land size of greater than 10 is categorized as Large Sized Land. The particular study is giving relevance to the categorization and since the study focuses on the persons who occupy land, the landless category as per NSSO with a land size of 0.00 to 0.002 Hectares is not taken into consideration. Ownership of land refers to a plot of land which was considered as owned by the household, if permanent heritable possession, with or without the right to transfer the title was vested in the member or members of the household(NSSO, 70th Round, 2013). The Distribution of Owned Land Holdings of sample respondents and the number of respondents who belong to each category is given in Table 4.7.

Table 4.7.

Distribution of Owned land Holdings of sample respondents

Category of owned land holding	Size of land	Frequency	Percent
Marginal	<1.00	173	57.6
Small	1.01-2.00	56	18.7
Semi-Medium	2.01-4.00	42	14.0
Medium	4.01- 10.00	29	9.7
Large	> 10.01	0	0
Total		300	100

Source: Primary field survey

The distribution of the land occupied by the respondents as on the basis of categorization by NSSO reveals that 57.6 percent of the respondents own Marginal Land , 18.7 percent occupies Small Land while only 14.0 percent own Semi- Medium Land, 9.7 percent own Medium sized Lands and no respondent owned Large size lands. The number of respondents who own Medium land is far lesser than that of Marginal land. Increased number of respondents in the Marginal Lands and absence of respondents in Large size lands reflect the fact that farmers with Large size lands are lesser in selected area within the Physiological Zones. Since the study is also focused on Physiological Zones such as Lowland, Highland and Midland, the distribution of land on the basis of land holdings in the zones is also relevant as shown in Table 4.8.

Table 4.8.

Size of Owned Land Holdings in Physiological Zones

| Category of owned land holding	Type of land					Total	
	Lowland		Midland		Highland		
Marginal	40	(66.7)	85	(70.8)	48	(40)	173 (57.6)
Small	9	(15.0)	32	(26.7)	15	(12.5)	56 (18.7)
Semi-Medium	8	(13.3)	3	(2.5)	31	(25.8)	42 (14.0)
Medium	3	(5.0)	0	(0)	26	(21.7)	29 (9.7)

Source: Primary Field Survey.

Note: Figures in Parentheses represent percentages to respective total

In all physiological zones, 57.6 percent of respondents own Marginal Lands with size in between 0.002 and 1 Hectare, 18.7 percent own small sized land holdings with a size in between 1.01 and 2 Hectares, only 14.0 percent owned Semi- Medium sized lands in between 2 to 4 Hectares and only 9.7 percent owned Medium sized lands with area between 4 and 10 Hectares. The respondents who own Marginal Land Holdings are

sharply higher than other landholdings. Within the Lowland itself, 66.7 percent, 15.0 percent, 13.3 percent and 5 percent respondents own Marginal, Small, Semi-Medium and Medium sized lands respectively. Within Highlands 40 percent owned Marginal Holdings, and within Midland, 70.8 percent owned Marginal Lands. Medium lands are comparatively high in Highlands with 21.7 percent while within the Highlands, Marginal Holdings are higher than other categories. The graphical representation of categorization of owned land holdings is given in Figure 4.2.

Figure 4.2

Category of Size of Owned Land Holdings in Physiological Zones
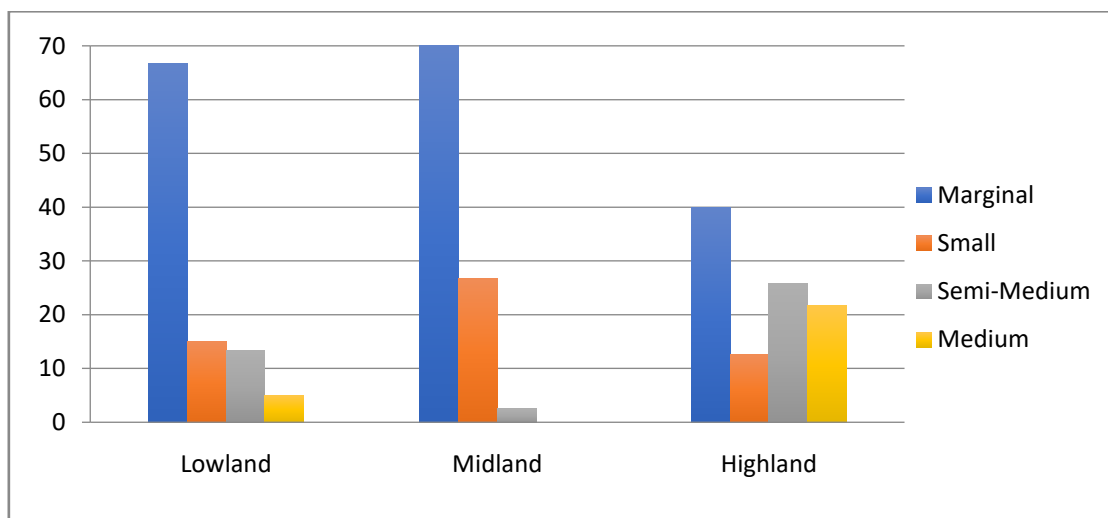
The figure depicts that the number of respondents who owned Marginal land is high in every land size categories giving an evidence that 57.6 percent of farmers owned lands with less than 1 Hectare. About 66.7 percent of landholdings within Lowlands are Marginal lands while only 33.3 percent belong to other categories. In Highlands, 52.5 percent have land size less than 4 Hectares while 47.5 percent have land size greater than 4 Hectares. A proportional distribution of all land size exists in Highlands with high proportion of Medium land as respondents in Highlands of Agali Panchayat, Palakkad own 21.7 Medium sized lands.

4.5. Socio – Demographic Profile of Study Area

Demographic features of the sample respondents are necessary for the study as it helps to know about the age, social group, marital status, gender, education of farmer households and to identify the relationship between the variables and agricultural land use. All the variables incorporated may be directly or indirectly influencing the size of owned

land holding. The Socio - Demographic profile of farmer respondents related to the economic variables and attributes are given in Table 4.9.

Table 4.9.

Socio - Demographic profile of farmer respondents

| Economic Variables	Attributes	Marginal		Small		Semi-Medium		Medium		Total	
Physiological Zones	Lowland	40	(23.1)	9	(16.1)	8	(19.0)	3	(10.3)	60	(20)
	Midland	85	(49.1)	32	(57.1)	3	(7.1)	0	(0)	120	(40)
	Highland	48	(27.7)	15	(26.8)	31	(73.8)	26	(89.7)	120	(40)
Age	<30	0	(0)	0	(0)	1	(2.4)	0	(0)	1	(0.3)
	31-60	112	(64.7)	30	(53.6)	18	(42.9)	6	(20.7)	166	(55.3)
	>61	61	(35.3)	26	(46.4)	23	(54.8)	23	(79.3)	133	(44.3)
Social Group	ST	0	(0.0)	4	(7.1)	30	(71.4)	26	(89.7)	60	(20)
	SC	20	(11.6)	4	(7.1)	0	(0)	0	(0)	24	(8.0)
	OBC	76	(43.9)	18	(32.1)	2	(4.8)	2	(6.9)	98	(32.7)
	Others	77	(44.5)	30	(53.6)	10	(23.8)	1	(3.4)	118	(39.3)
Marital Status	Unmarried	1	(0.6)	1	(1.8)	0	(0.0)	0	(0.0)	2	(0.7)
	Married	164	(94.8)	51	(91.1)	40	(95.2)	28	(96.6)	283	(94.3)
	Widower	8	(4.6)	4	(7.1)	2	(4.8)	1	(3.4)	15	(5.0)
Gender	Male	148	(85.5)	45	(80.4)	38	(90.5)	29	(100)	260	(86.7)
	Female	25	(14.5)	11	(19.6)	4	(9.5)	0	(0.0)	40	(13.3)
Education Qualification	Lower Primary	21	(12.1)	12	(21.4)	33	(78.6)	28	(96.6)	94	(31.3)
	Upper Primary	4	(2.3)	2	(3.6)	1	(2.4)	0	(0.0)	7	(2.3)
	Secondary	89	(51.4)	25	(44.6)	4	(9.5)	1	(3.4)	119	(39.7)
	Senior secondary	35	(20.2)	12	(21.4)	0	(0.0)	0	(0.0)	47	(15.7)
	Higher	24	(13.9)	5	(8.9)	4	(9.5)	0	(0.0)	33	(11.0)
Total		173	(100)	56	(100)	42	(100)	29	(100)	300	(100)

Source: Primary Field Survey

Note: Figures in Parentheses represent percentages to respective total.

Age is classified into three inclusive groups which rectifies that 55.3 percent of the respondents belong to the age group of 31 to 60 and one of the reason for the high frequency is the participation of pensioners in agricultural activities after retirement. 44.3 percent of total respondents are of 61+ age and only 0.3 percent belong the age of less than 30. The study gives the true evidence that those who are involved in agricultural activities are aged people who are interested in agriculture with an attitude of protection of nature

and considering agriculture as the primary source of income. Rather than these, they are very much attached to the land handed over to them by forefathers as the responsibility of protecting land is vested in them. The Figure 4.3 gives pictoral illustration of age and land owned in the selected area.

Figure 4.3.

Age and Land Owned
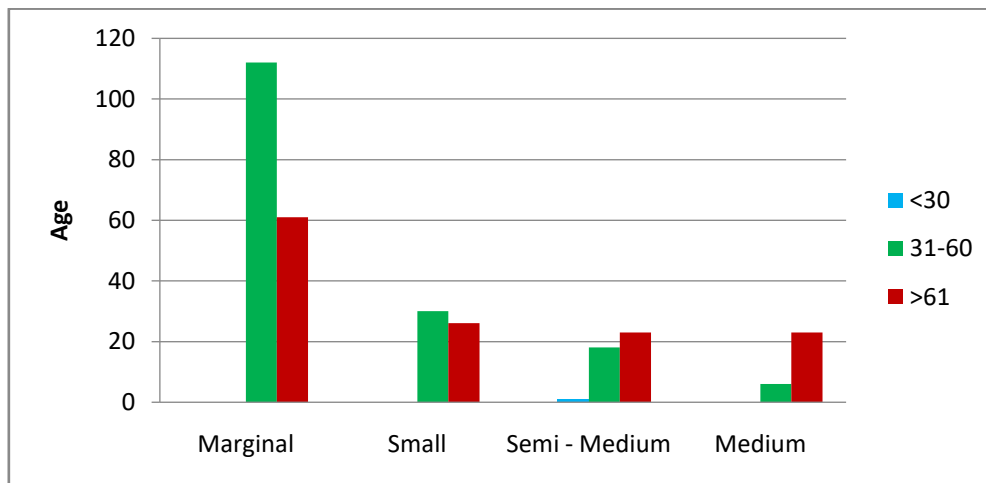
Considering the age of farmers, only one respondent belong to the age group of less than 30 (0.3 percent) which gives the clear evidence that younger generations are not involved in agricultural activities along with a land ownership while it may be highlighted that among 79.3 percent of respondents belonging to age - group of 61+ within Highlands, majority are Irulas of Scheduled Tribe Community of Agali Panchayat who are healthy enough to engage in agriculture keeping in consideration an in-depth relationship between nature and man.

Among the categorization of Social Group, 20 percent respondents belong to Scheduled Tribe especially Irulas, 8 percent belongs to Scheduled Caste, 32.7 percent belongs to Other Backward Communites and 39.3 percent belongs to Other Categories. Within the Semi-Medium and Medium categories, 71.4 percent and 89.7 percent is holded by ST Category while there exists no land ownership for SC Category. Irula community occupied land hereditarily from their forefathers by converting Primary forests to Agricultural land. The categorization of social group in the land owned is important as the distribution and ownership of land varies according to social group. Very rarely, some of the categories in social group gives importance to maternal hereditary hand over of land rather than patriarchal system. In the social groups, Others category includes the Nair Caste in which females owned the land and handed over to female hiers due to the

existence of Marumakkathayam, the system of matrilineal inheritance in which succession to the property was traced through females and females in Christians also owned some land of their own.

Considering the Marital status, 94.3 percent is married while unmarried and divorced respondents together occupy only 5.7 percent. Gender categorisation in the study area is given by the explanation that 86.7 percent respondents belong to Male category while only 13.3 percent belong to Female Category. A gender discrimination exists in the study area in the ownership pattern of land in which male respondents owned majority of land than that of female respondents and is represented in Table 4.4.

Figure 4.4.

Gender and Land Owned
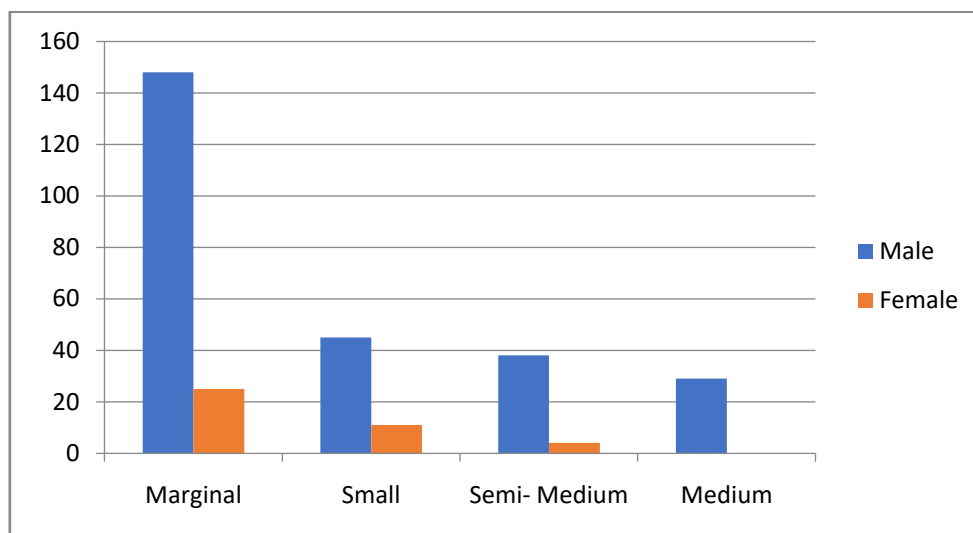
In Lowlands, 85.5 percent are male respondents, 14.5 percent are female respondents, in Midlands, 80.4 percent are male respondents, 19.6 percent are females, while within Highlands, 100 percent belong to male category in ownership of land. This gives the evidence that ownership of land is vested in hands of male respondents rather than female respondents.

Considering the Education Category, among the total respondents, 39.7 percent has Secondary Education while only 26.7 percent of respondents have education above Senior secondary and 33.6 percent has education below Secondary Education which gives the evidence of lesser participation of educated individuals in farming activities. Within the Marginal and Small sized lands, majority of the farmers have Secondary Education while

in Semi-Medium and Medium sized lands, majority of the respondents have the Lower Primary Education. The data reveals that in the Semi-Medium and Medium Lands, the land is owned by less literate farmers than the Small and Marginal lands.

Figure 4.5.

Education and land owned
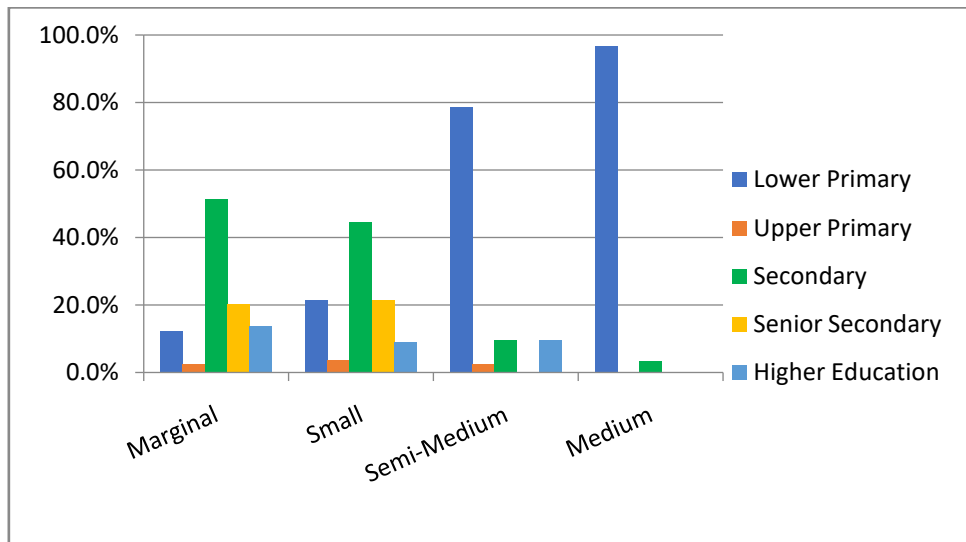
The participation of educated individuals in agriculture activities is to be promoted in order to implement the modern possibilities in agriculture and attain a better availability of agricultural commodities for better health. The awareness of innovative technologies, application of fertlisers, new marketing facilities will be more acceptable and always an educated farmer can motivate other educated people to involve and participate in agriculture.

4.6. Socio- Economic Characteristics of Respondents

The Socio- Economic characteristics of respondents is necessary to pertain further interpretations of the data. The socio- economic profile gives preference to the variables such as, Poverty level, Type of Family, Years of Experience as farmers, Occupation of Parents, Family size, Number of Dependents, Number of Earning Members, Number of farmers and size of owned land holdings among the sample respondents. The Table gives relevance to the relation between the particular variables and the size of owned land holding. Poverty level is measured by two categories – APL and BPL representing Above Poverty Line and Below Poverty Line respectively based on which the minimum standards of living are defined. Type of family is categorized as Nuclear and Joint family and Years

of experience is given by the years of involvement in farming activities by profession and earn income which is depicted in Table 4.10.

Table 4.10.

Socio- Economic Status of farmer respondents

| Economic Variables	Attributes	Marginal		Small		Semi-Medium		Medium		Total	
Poverty Level	APL	149	(86.1)	52	(92.9)	12	(28.6)	3	(10.3)	216	(72.0)
	BPL	24	(13.9)	4	(7.1)	30	(71.4)	26	(89.7)	84	(28.0)
Type of Family	Nuclear	133	(76.9)	27	(48.2)	9	(21.4)	2	(6.9)	171	(57.0)
	Joint	40	(23.1)	29	(51.8)	33	(78.6)	27	(93.1)	129	(43.0)
Years of Experience	0-20	71	(41.0)	15	(26.8)	7	(16.7)	1	(3.4)	94	(31.3)
	21-40	88	(50.9)	31	(55.4)	26	(61.9)	20	(69.0)	165	(55.0)
	>41	14	(8.1)	10	(17.9)	9	(21.4)	8	(27.6)	41	(13.7)
Occupation of Parents	Agriculture	129	(74.6)	55	(98.2)	41	(97.6)	29	(10.0)	254	(84.7)
	Non-agriculture	44	(25.4)	1	(1.8)	1	(2.4)	0	(0.0)	46	(15.3)
Family Size	1-2	1	(0.6)	0	(0.0)	0	(0.0)	0	(0.0)	1	(0.3)
	3-4	44	(25.4)	10	(17.9)	11	(26.2)	1	(3.4)	66	(22.0)
	5-6	103	(59.5)	28	(50.0)	15	(35.7)	14	(48.3)	160	(53.3)
	7-8	23	(13.3)	16	(28.6)	6	(14.3)	6	(20.7)	51	(17.0)
	9-10	1	(0.6)	2	(3.6)	10	(23.8)	6	(20.7)	19	(6.3)
	11-12	1	(0.6)	0	(0.0)	0	(0.0)	2	(6.9)	3	(1.0)
Number of Dependents	1-2	71	(41.0)	20	(35.7)	17	(40.5)	9	(31.0)	117	(39.0)
	3-4	89	(51.4)	26	(46.4)	16	(38.1)	10	(34.5)	141	(47.0)
	5-6	6	(3.5)	8	(14.3)	1	(2.4)	10	(34.5)	15	(5.0)
	7-8	1	(0.6)	0	(0.0)	0	(0.0)	0	(0.0)	1	(0.3)
	Nil	6	(3.5)	2	(3.6)	2	(19.0)	10	(34.5)	26	(8.7)
Number of Earning Members	1-2	74	(42.8)	18	(32.1)	10	(23.8)	2	(6.9)	104	(34.7)
	3-4	95	(54.9)	34	(60.7)	15	(35.7)	5	(17.2)	149	(49.7)
	5-6	4	(2.3)	3	(5.4)	11	(26.2)	17	(58.6)	35	(11.7)
	7-8	0	(0.0)	1	(1.8)	6	(14.3)	5	(17.2)	12	(4.0)
Farmers within family	1-3	173	(100)	53	(92.9)	25	(59.5)	7	(24.1)	258	(86.0)
	4-6	0	(0.0)	3	(5.4)	17	(40.5)	22	(75.9)	42	(14.0)
Total		173	(100)	56	(100)	42	(100)	79	(100)	300	(100)

Source: Primary Field Survey

Note: Figures in Parentheses represent percentages to respective total.

Among the respondents, 72 percent farmers belong to APL Category and 28 percent to BPL Category giving the evidence that majority of farmer respondents are above Poverty line. Among the respondents within the Marginal lands, 86.1 percent belong to APL Category and 13.9 percent belong to BPL Category, among Small lands - 92.9 percent belong to APL Category, and 7.1 percent belong to BPL Category, among

Semi-Medium Lands - 28.6 percent belong to APL Category and 71.4 percent belong to BPL Category and among Highlands, 10.3 percent belong to APL Category and 89.7 percent belong to BPL Category. The poverty level of respondents is represented in Figure 4.6.

Figure 4.6.

Poverty Level of Respondents
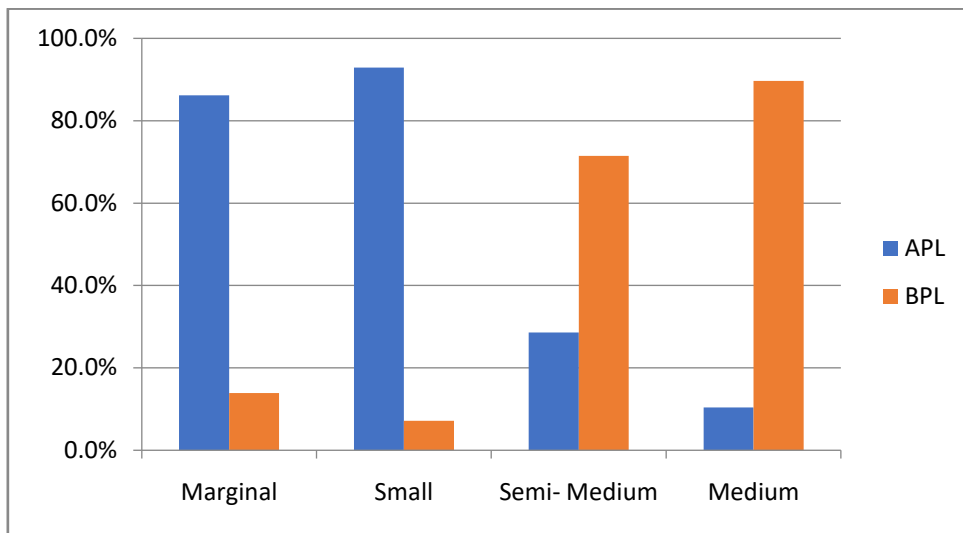
Majority of farmers in Marginal lands belong to APL Category and major proportion of farmers in Semi-Medium and Medium lands belong to BPL Category which gives the evidence that the primitive tribal communities (Priority Household Ration Card-PPH) is automatically included in BPL Category in order to avail the benefits of Public Distribution system.

Among the respondents, 57 percent of respondents have Nuclear family (two parents along with their children) while 28 percent have Joint Family with a large number of members. Within the Marginal land category, 76.9 percent has Nuclear family and 23.1 percent has Joint family while 93.1 percent of respondents within the medium land size have joint family in the study.

The farmers are experienced in doing farming activities with 55 percent having the maximum years of experience in the range of 21-40 years, 31.3 percent have an experience of less than 20 years while 13.7 percent are experienced with more than 41 years. The maximum experienced respondents opined the strong bounded intimate relationship with nature and soil that attained hereditarily. Majority of Respondents have

an inborn efficiency in farming activities as they had a hierarchal history of farming within the family itself. 84 percent of respondents have a history of farming in themselves because their parents were engaged in agricultural activities as the main source of their livelihood and the parents handed over the lessons of farming to the next generation.

Figure 4.7

Creation of Interest by parents
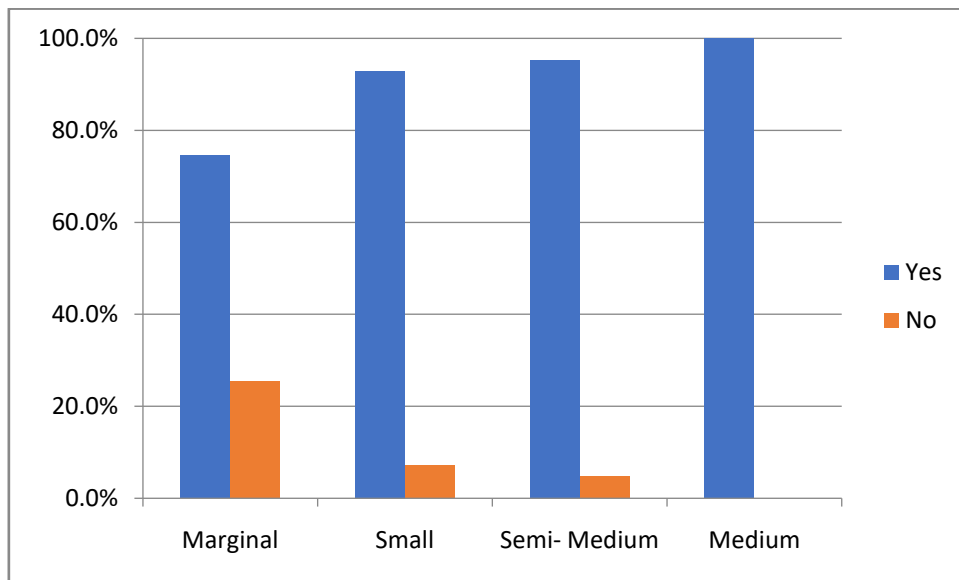
Since the respondents are a part of rural population, 77.7 percent have a large family size in between 5 and 12 while only 22.3 percent have the family size in between 1 and 4. While making a comparison between the categories, the frequency is maximum in the family size group of 3-4. The number of dependents is maximum with 47.0 percent in between 3-4 and maximum with 51.4 percent in the same category within the Marginal lands. Only 0.3 percent of total respondents have more than 7 individuals depending upon the farmer household for their livelihood. 8.7 percent of the respondents have no dependents because the individuals themselves are earning members in the category. Earning members within the family is also maximum with 49.7 percent in the same category and a maximum with 54.9 percent within the Marginal lands. 86 percent of respondents have less than 3 farmers in their family while 14 percent have farmers in between 4 and 6 in the family itself. The number of farmers is maximum in 1-3 category with 100 percent within the marginal lands while there exists no farmers in the family within in the category of 4-6 in Marginal Lands. Within Highlands, 75.9 percent of respondents have large number of farmers ranging from 4 to 6 as majority of family

members are engaging in agricultural activities in Highlands as their main source of Livelihood is agriculture itself.

Each respondent has a recognition in one of the Social groups, which is classified into four as ST, SC, OBC and Others. Distribution as well as ownership of land varies with every Social Group and gender categories of the respondents. The Gender wise distribution of Owned Land Holdings is necessary to know about the disparity in land ownership of the holdings. The relation between Social Group, Gender and Ownership of land is given in Table 4.11.

Table 4.11.

Social Group, Gender and Ownership of land

Social Group	Gender	Type of Ownership				Total	
		Individual ownership		Joint ownership			
ST	Male	9	(100)	50	(98.0)	59	(98.3)
	Female	0	(0.0)	1	(2.0)	1	(1.7)
	Total	9	(100)	51	100	60	100
SC	Male	23	(95.8)	0	(0.0)	23	(95.8)
	Female	1	(4.2)	0	(0.0)	1	(4.2)
	Total	24	(100)	0	(0.0)	24	(100)
OBC	Male	95	(96.9)	0	(0.0)	95	(96.9)
	Female	3	(3.1)	0	(0.0)	3	(3.1)
	Total	98	(100)	0	(0.0)	98	(100)
Others	Male	82	(70.1)	1	(100)	83	(70.3)
	Female	35	(29.9)	0	(0.0)	35	(29.7)
	Total	117	(100)	1	(100)	118	(100)
Total	Male	209	(84.3)	51	(98.1)	260	(86.7)
	Female	39	(15.7)	1	(1.9)	40	(13.3)
	Total	248	(100)	52	(100)	300	(100)

Source: Primary Field Survey

Note: Figures in Parentheses represent percentages to respective total.

While considering the Social Group, gender and ownership of respondents, joint ownership exists only in ST Category of Highlands depicting the inclusion of siblings in ownership and not the better half. Among the total respondents, Male respondents have 84.3 percent of individual ownership while Female respondents have 15.7 percent of Individual Ownership. But 98.1 percent of Joint Ownership is held by male head of the family while only 1.9 percent is held by women respondents. Among the 'Others' category, Nair and Christian widows are leading in individual female ownership of land.

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The Nair caste carries matrilinial system of land ownership in which the ownership is vested in female members of the family.

4.7. Socio Demographic Characteristics within Physiological Zones

The Demographic features of the sample respondents are necessary for the study as it helps to know about the age, social group, marital status, gender, education of farmer households and to identify the relationship between the variables and Physiological Zones such as Lowlands, Highlands and Midlands. All the variables incorporated may be directly or indirectly influenced by the topography of Physiological Zones. The Socio - Demographic profile of farmer respondents related to the economic variables and attributes are given in Table 4.12.

Table 4.12.

Socio demographic characteristics within the Physiological Zones

| DemographicVariables	Attributes	Lowlands		Midlands		Highlands		Total	
Age	<30	0	(0.0)	0	(0.0)	1	(0.8)	1	(0.3)
	31-60	41	(68.3)	78	(65.0)	47	(39.2)	166	(55.3)
	>61	19	(31.7)	42	(35.0)	72	(60.0)	133	(44.3)
Social Group	ST	0	(0.0)	0	(0.0)	60	(50.0)	60	(20.0)
	SC	8	(13.3)	8	(13.3)	0	(0.0)	24	(8.0)
	OBC	28	(46.7)	28	(46.7)	25	(20.8)	98	(32.7)
	Others	24	(40.0)	24	(40.0)	35	(29.2)	118	(39.3)
Marital Status	Unmarried	0	(0.0)	1	(0.8)	1	(0.8)	2	(0.7)
	Married	52	(86.7)	117	(97.5)	114	(95.0)	283	(94.3)
	Widower	8	(13.3)	2	(1.7)	5	(4.2)	15	(5.0)
Gender	Male	54	(90.0)	94	(78.3)	112	(93.3)	260	(86.7)
	Female	6	(10.0)	26	(21.7)	8	(6.7)	40	(13.3)
Education Qualification	Lower Primary	13	(21.7)	8	(6.7)	73	(60.8)	94	(31.3)
	Upper Primary	1	(1.7)	0	(0.0)	6	(5.0)	7	(2.3)
	Secondary	38	(63.3)	57	(47.5)	24	(20.0)	119	(39.7)
	Senior secondary	4	(6.7)	33	(27.5)	10	(8.3)	47	(15.7)
	Higher	4	(6.7)	22	(18.3)	7	(5.8)	33	(11.0)

Source : Primary Field Survey

Among the total respondents, only a single respondent belongs to the age of less than 30, 55.3 percent belongs to the age group of 31-60 and 44.3 percent belongs to the age group of greater than 61. Within the Lowlands, no farmer respondent has an age of less than 30 is included, 68.3 percent belongs to age group of 31-60 while 31.7 percent belongs

to the age group of greater than 61. The graphical representation of the age group within the Physiological Zones is given in Figure 4.8

Figure 4.8.

**Age group within the Physiological Zones**
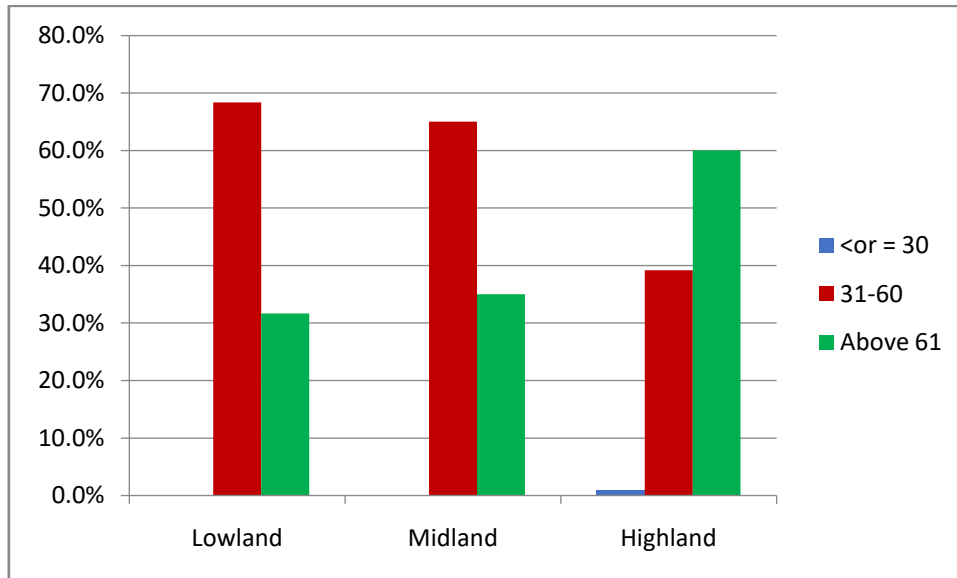
Within the Midlands, no respondent has the age of less than 30, 65.0 percent belongs to the age group of 31- 60 and 35 percent belongs to the age of greater than 61. Within Highlands, one respondent belongs to the age of less than 30 with 0.8 percent, 39.2 percent respondents belongs to the age group of 31-60 and 60 percent respondents belong to the age with equal to or greater than 61. Within the age group, the maximum number of total respondents belong to the age group of 31-60, while within Lowlands and Midlands, the maximum number of total respondents belong to the age group of 31-60 but within the Highlands the farmers mainly have an age of greater than or equal to 61. So the most aged farmers are engaged in agriculture in Highlands rather than in Lowlands and Midlands.

Among the total respondents within the Social Group, 20 percent belongs to ST, 0.8 percent belongs to SC Group, 32.7 percent belongs to OBC and 39.3 percent belongs to Others among whom the Nair Caste is the Dominant one followed by Christians. Within Lowlands and Midlands, no respondents belong to the ST group, while within Lowlands, 13.3 percent belongs to SC, 46.7 percent to OBC group and 40 percent belongs to Others. Within Midlands, 13.3 percent respondents belong to SC group, 46.7 percent to Other Backward Community, and 40 percent belongs to Others Category. The Graphical

representation of categorization of Social Group within the Physiological Zones is given in Figure 4.9.

Figure 4.9.

**Social group within Physiological Zones**
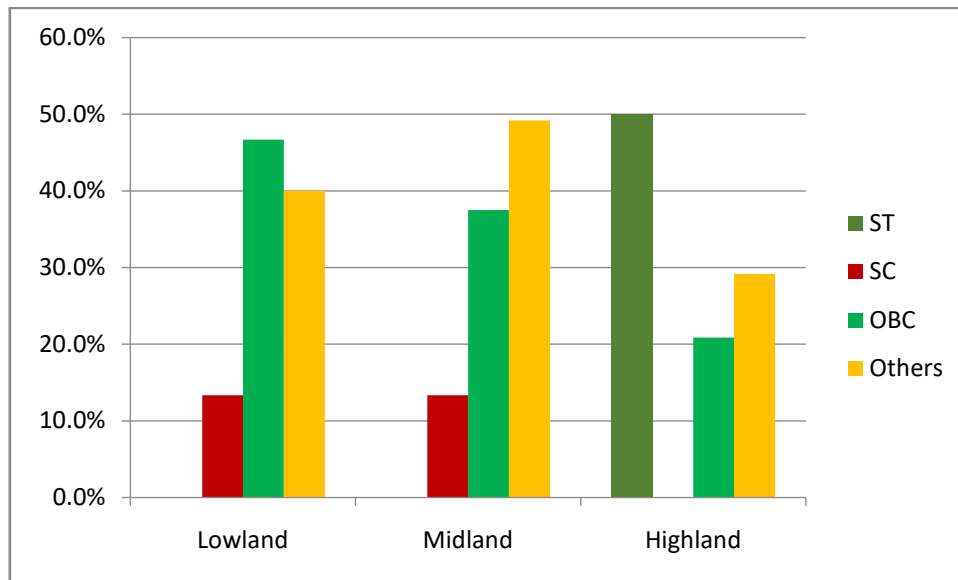
Within Highlands, 50.0 percent respondents belong to ST Category especially Irulas, 0.0 percent to SC Category, 20.8 percent to Other Backward Community, and 29.2 percent belongs to Others Category. Within the Social Groups, Others category included the maximum number of respondents, while within Lowlands, OBC category included the maximum number of respondents while in Highlands, the highlighted fact is that ST category included the maximum number of respondents followed by Others category and OBC Category within the particular study.

Considering the Marital Status, among the total respondents, 0.7 percent respondents are unmarried, 94.3 percent are married and 5.0 percent are widowers. Within the Lowlands, 0.0 percent respondents are unmarried, 86.7 percent are married and 13.3 percent are widowers.Within the Midlands, 0.8 percent respondents are unmarried, 97.5 percent are married and 1.7 percent are widowers who lived a single life. Within the Highlands, 0.8 percent respondents are unmarried, 95.0 percent are married and 4.2 percent are widowers. Within the total respondents from Physiological Zones, the maximum number of respondents are married and within all the Physiological Zones, maximum number of respondents have marital status rather than unmarried and widower status.

Among the total respondents within the Physiological Zones, considering the gender status, 86.7 percent are male respondents while only 13.3 percent are female respondents. Within the Lowlands, 90.0 percent are male respondents while only 10.0 percent are female respondents, within the Midlands, 78.3 percent are male respondents while only 21.7 percent are female respondents.

**Figure 4.10.**

Gender within Physiological Zones
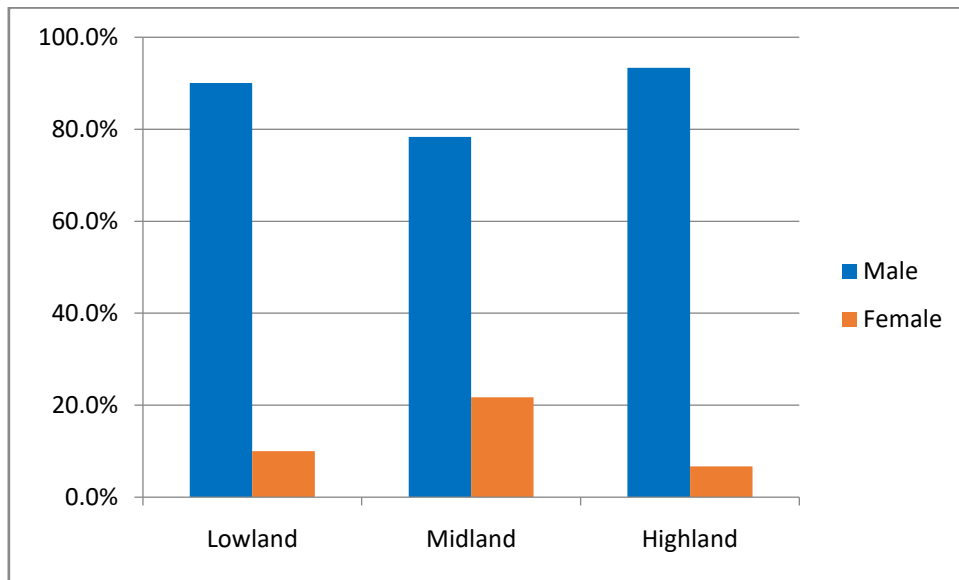
Within the Highlands, 93.3 percent are male respondents while only 6.7 percent are female respondents. Among the total respondents in the study, number of male respondents who owned land used for agricultural purposes is higher than the number of female respondents.

Among the total respondents, 31.3 percent farmers have Lower Primary education, 2.3 percent have Upper Primary Education, 39.7 percent have secondary education, 15.7 percent have Senior Secondary Education and 11.0 percent have Higher Education. Within the Lowlands, 21.7 percent have Lower Primary education, 1.7 percent have Upper Primary Education, 63.3 percent have secondary education, 6.7 percent have Senior Secondary Education and 6.7 percent have Higher Education. Within Midlands, 6.7 percent have Lower Primary education, 0.0 percent have Upper Primary Education, 47.5 percent have secondary education, 27.5 percent have Senior Secondary Education and 18.3 percent have Higher Education. Within the Highlands, 60.8 percent have Lower Primary education, 5.0 percent have Upper Primary Education, 20.0 percent have

secondary education, 8.3 percent have Senior Secondary Education and 5.8 percent have Higher Education.

Figure 4.11.

Education of farmers within the Physiological Zones
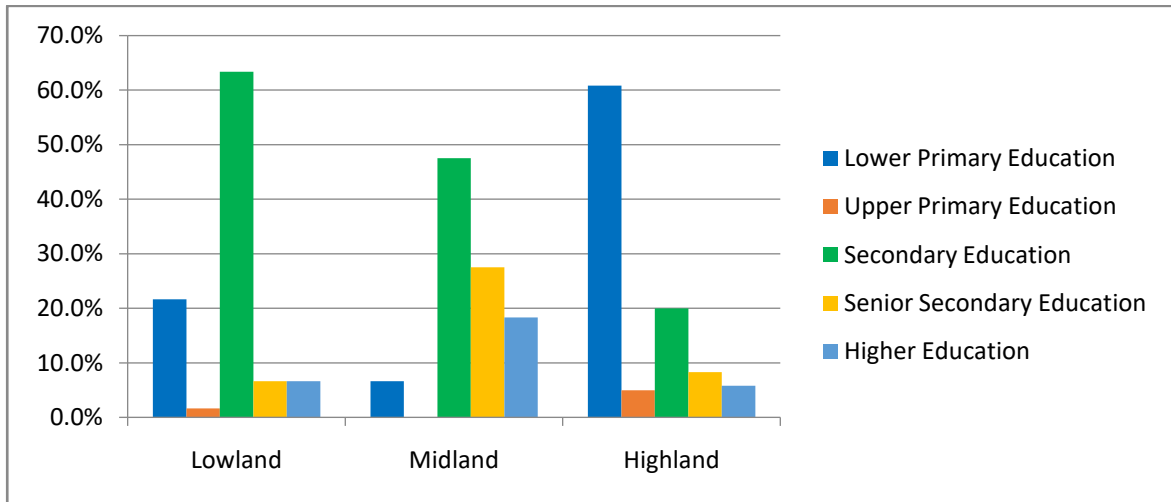
Within the selected area, among the total respondents, majority have education qualification with Secondary Education followed by Lower Primary Education and Senior Secondary Education. Within the Lowlands, majority of respondents have education qualification with Secondary Education followed by Lower Primary Education and Secondary as well as Senior Secondary Education.Within the Midlands, majority of respondents have education qualification with Secondary Education followed by Secondary Education and Senior Secondary Education.Within the Highlands, majority of respondents have education qualification with Lower Primary Education followed by Senior Secondary Education. A fact to be noted is that in Midlands and Lowlands, majority of the farmers have Secondary Education which is a good indicator for participation of educated people in agriculture. In Highlands, very less educated farmers are mainly involved in agricultural activities. The Government must take initiatives to encourage the highly educated youth towards the agricultural purposes and diversification in employment by giving preference to agricultural sector need to be relevant. The attitude that high education qualification is a yardstick for white collar jobs have to be changed and the state must give relevance for agriculture based activities along with the secondary and tertiary activities.

4.8 Socio- Economic Characteristics of respondents within Physiological Zones : The Socio- Economic characteristics of respondents within Physiological Zones is necessary to pertain further interpretations of the data. The socio- economic profile gives preference to the variables such as Poverty level, Type of Family, Years of Experience as farmers, Occupation of Parents, Family size, Number of Dependents, Number of Earning Members, Number of farmers and size of owned land holdings among the sample respondents. depicted in Table 4.13.

Table 4.13.
**Socio- Economic Characteristics of farmers within Physiological Zones**

Eco Variables	Attributes	Lowlands		Midlands		Highlands		Total	
Poverty Level	APL	43	(71.7)	117	(97.5)	56	(46.7)	216	(72.0)
	BPL	17	(28.3)	3	(2.5)	64	(53.3)	84	(28.0)
Type of Family	Nuclear	47	(78.3)	77	(54.2)	47	(39.2)	171	(57.0)
	Joint	13	(21.7)	43	(35.8)	73	(60.8)	129	(43.0)
Years of Experience	0-20	30	(50.0)	41	(34.2)	23	(19.2)	94	(31.3)
	21-40	24	(40.0)	70	(58.3)	71	(59.2)	165	(55.0)
	>41	6	(10.0)	9	(7.5)	26	(21.7)	41	(13.7)
Occupation of Parents	Agriculture	40	(66.7)	102	(85.0)	112	(93.3)	254	(84.7)
	Non-Agriculture	20	(33.3)	18	(15.0)	8	(6.7)	46	(15.3)
Family Size	1-2	0	(0.0)	0	(0.0)	1	(0.8)	1	(0.3)
	3-4	17	(28.3)	22	(18.3)	27	(22.5)	66	(22.0)
	5-6	40	(66.7)	68	(56.7)	52	(43.3)	160	(53.3)
	7-8	2	(3.3)	28	(23.3)	21	(17.5)	51	(17.0)
	9-10	1	(1.7)	1	(0.8)	17	(14.2)	19	(6.3)
	11-12	0	(0.0)	1	(0.8)	2	(1.7)	3	(1.0)
Number of Dependents	1-2	28	(46.7)	43	(35.8)	46	(38.3)	117	(39.0)
	3-4	30	(50.0)	62	(51.7)	49	(40.8)	141	(47.0)
	5-6	1	(1.7)	11	(9.2)	3	(2.5)	15	(5.0)
	7-8	0	(0.0)	1	(0.8)	0	(0.0)	1	(0.3)
	9-10	1	(0.7)	3	(2.5)	22	(18.3)	26	(8.7)
Number of Earning Members	1-2	25	(41.7)	48	(40.0)	31	(25.8)	104	(34.7)
	3-4	34	(56.7)	69	(57.5)	46	(38.3)	149	(49.7)
	5-6	1	(1.7)	3	(2.5)	31	(25.8)	35	(11.7)
	7-8	0	(0.0)	0	(0.0)	12	(10.0)	12	(4.0)
Farmers within family	1-3	60	(100)	120	(100)	78	(65.0)	258	(86.0)
	4-6	0	(0.0)	0	(0.0)	42	(35.0)	42	(14.0)
Total		60	(100)	120	(100)	120	(100)	300	(100)

Source : Primary Field Survey

Within the study area, 72.0 percent belonged to APL Category, 28.0 percent belonged to BPL Category but within Lowlands, 71.7 percent belonged to APL Category and 28.3 percent belonged to BPL Category which is represented in Table 4.12.

Figure 4.12

Poverty Level of farmers within Physiological Zones
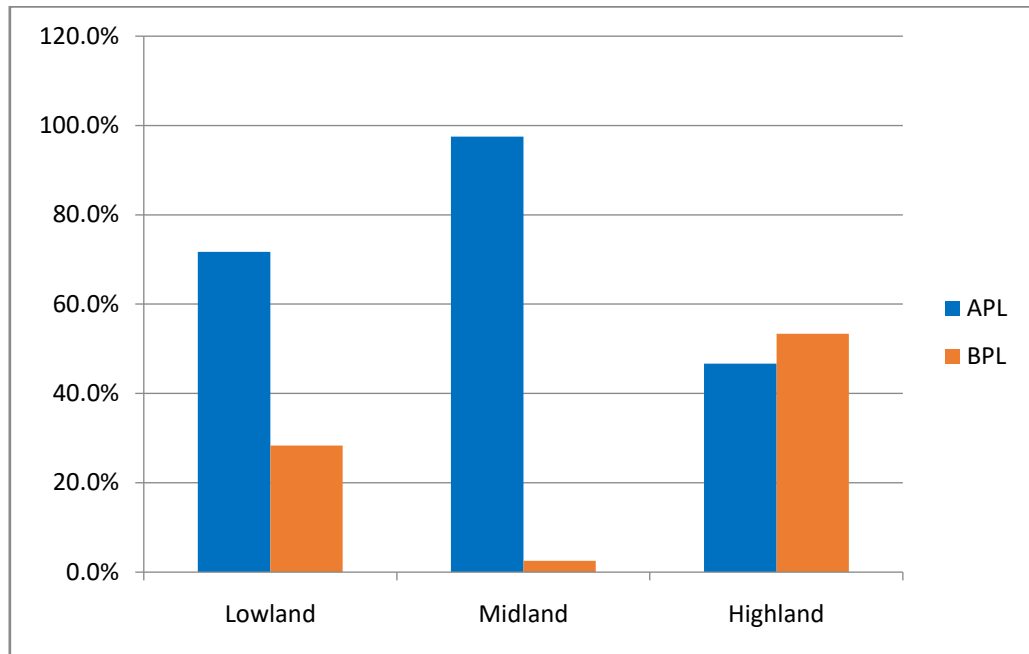
Within Midlands, 97.5 percent belonged to APL Category and 2.5 percent belonged to BPL Category.Within Highlands, 46.7 percent belonged to APL Category and 53.3 percent belonged to BPL Category. It can be concluded that in the study, among the total respondents, majority of farmers belong to APL Category, while an exception exists in Highlands with half of the respondents within the area belongs to BPL Category.

Among the total respondents, type of family which can be categorized as Nuclear and Joint family is given and 57.0 percent have Nuclear family which includes husband, wife and children while 43.0 percent have Joint Family which includes husband, wife and children along with father, mother.

Figure 4.13

Type of Family within the Physiological Zones
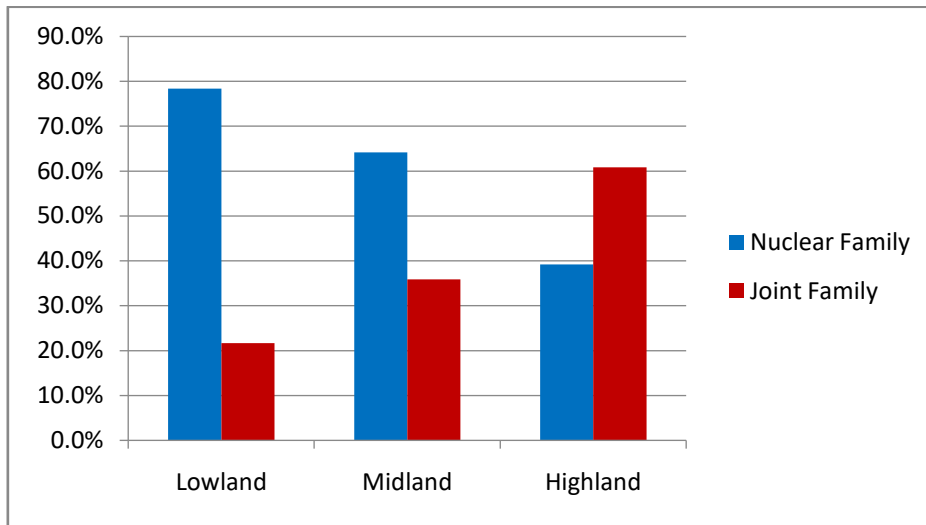
In Lowlands, 78.3 percent have Nuclear family while 21.7 percent have Joint Family, In Midlands, 54.2 percent have Nuclear family while 35.8 percent have Joint Family,In Highlands, 39.2 percent have Nuclear family while 60.8 percent have Joint Family. Since the agricultural activities are mainly conducted in rural areas, features of rural population is reflected in the study area in which one most important factor is the increasing number of members within the family itself and the existence of joint family. The particular feature is also reflected in the study area. Number of family members are high in Highlands when compared to Lowlands and Midlands.

The years of experience is categorized into 0-20, 21-40 and greater than 41 among which 31.3 percent respondents have farming experience of less than 20 years, 55.0 percent experienced for 21- 40 years and 13.7 percent have farming experience of greater than 41 years. In Lowlands, 50 percent of respondents have farming experience of less than 20 years, 40 percent have farming experience of 21- 40 years and 10 percent have farming experience of greater than 41 years. In Midlands, 34.2 percent of respondents have farming experience of less than 20 years, 58.3 percent have farming experience of 21- 40 years and 7.5 percent have farming experience of greater than 41 years. In Highlands, 19.2 percent of respondents have farming experience of less than 20 years, 59.2 percent have farming experience of 21- 40 years and 21.7 percent have farming experience of greater than 41 years.

Figure 4.14.

Years of farming experience within Physiological Zones
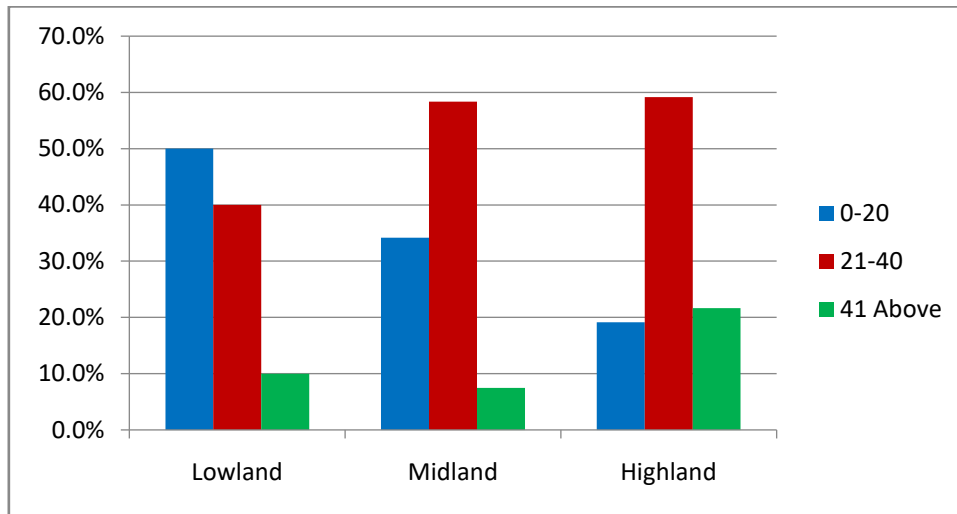
Among the total respondents from the study area, majority of farmers have farming experience for 21-40 years while within the Lowlands majority of respondents have farming experience of less than 20 years, within Midlands and Highlands, majority of respondents have farming experience in between 21 to 40 years, and farmers from Highlands have the maximum years of farming experience with greater than 41 years. Being engaged in farming activities, they are building up a healthy posture for better living without any lifestyle diseases. So they are healthy enough without any age bar in farming activities and they are willing with a whole hearted mind to do the farming activities.

Occupation of parents is an important factor influencing the farmers to stay back in the agricultural activity itself. Occupation of parents in agriculture or non- agriculture is very relevant in influencing their children and promoting them towards agricultural activities. The existing farmers learned the basic lessons of traditional methods of cultivation such as sowing and harvesting in different seasons such as mundakan, virippu and puncha from their parents. With the income earned out of their primary source, agriculture, they learnt how to distribute the agricultural products by keeping a part for themselves as their own food and the rest of the agricultural products for an earning for the future by selling in the market. So the left out agricultural products after self consumption is the main determinant of their income and through that their standard of living. The occupation of parents of the farmer household is given as a graph in Figure 4.15

Figure 4.15

Occupation of parents of farmers in Physiological zones
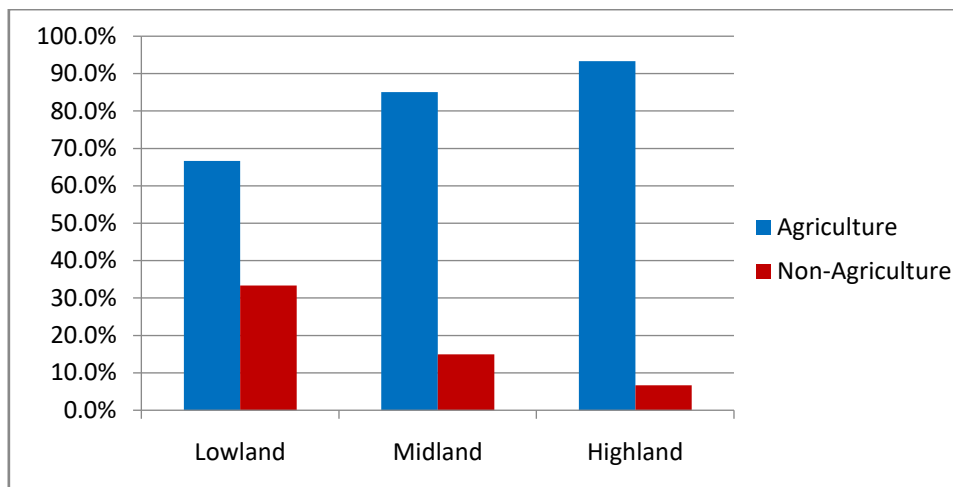
Among the total respondents, 84.7 percent have a history of agriculture within them as their parent's main occupation is agriculture itself while 15.3 percent have non- agriculture as their main occupation. A hereditary handing over from one occupation to another is also reflected in agricultural activities.

4.9. CONCLUSION

The chapter discusses the secondary information related to the profile area and physiological zones, how the socio- demographic and economic variables are related and expresses the proportion of economic variables within different groups, especially within the different categories of owned land holdings of farmer respondents. The ownership of land with special reference to the gender gives a picture of how the existing system of ownership creates a gender discrepancy and the system have to find a fruitful solution for the problems within each category.