
CHAPTER – III

**AGRO- ECONOMIC SITUATION OF THE
STUDY AREA**

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3.1 Introduction

The purpose of this chapter is to examine the major agro-economic characteristics of different class size of farms in the sampled area depending upon the level of development. This chapter is based on the primary data collected by us with a purpose to study different aspects of farmers in agricultural sector on a comparative basis which is considered to be relevant to examine the credit needs of different class size of farmers living in different areas.

3.2 Characteristics of Nepalese Agriculture

Agriculture has been the main occupation of the Nepalese people. About 80 percent employment opportunities are provided through this sector (CBS: 2001). Contribution of agricultural sector in total GDP is about 39 percent. About 18 percent of the total area of the country is under cultivation. Per capita holding area is only 0.15 hectare. Every holder has, on the average, about 3.3 plots of land holding and average size of each plot is 0.24 hectare. These information are based on National Census of Agriculture, Nepal (2001/2002). Some important characteristics of Nepalese agriculture are discussed below.

Number and Area of Holdings

The National Census of Agriculture of Nepal (NCAN) 2001/02, enumerated 364,139 holdings all over the country with a total area of holdings of 2.65 million hectares comprising almost 11 million of parcels of land. The average area per holding in 2001/02 was 0.789 hectares and the average number of parcels per holding was 3.3.

Hill ecological belt registered the highest number of holdings consisting of 47.2 percent of all holdings followed by Terai with about 44 percent of all holdings in the country. Mountain ecological belt has less than 300 thousand holdings but reported the highest average number of parcels at 4 per holding and second to the highest average area per holding, which is 0.733 hectares. On the other hand, Terai reported the biggest total area of holdings of 1.4 million hectares, which is approximately 52.6

per cent of the total area of agricultural holdings in the country. Thus, Terai as an ecological belt plays a major role in the development of agriculture in Nepal.

Among the development regions, Central Development Region got the biggest share of the total number of holdings having 30.8 percent of the total holdings of the country, followed by Eastern Development Region where 24 percent of the holdings was found. However, in terms of area, Eastern Development Region shares the biggest with almost 30 percent of the total area of holdings, followed by Central Development Region with a share of 28.3 percent.

Among districts, *Morang* reported the highest number of holdings, largest total area of all holdings as well as the average area per holding. The total number of holdings in *Morang* district was found to be 115,162 and the average area per holding was 1.012. Second in rank in importance both in area and the number of holdings is the district of *Jhapa*. Both of these districts belong to the Eastern Terai.

Distribution of Holdings by Size

Table 3.1: Land Distribution by Farm Size in Nepal, 2001

Size of Holdings	Number of holdings	Total area (%)	Hectares	%
No land	26,700	0.79	118.2	0.01
Holdings with land	3,337,439	99.21	2,653,918.9	99.99
Below 1 ha	2,494,593	74.15	103,1825.9	38.88
1-2 ha	588,649	17.50	791,965.0	29.84
2-3 ha	157,026	4.67	371,223.0	13.99
3 - 4 ha	51,573	1.53	175,690.5	6.62
4 - 5 ha	20,241	0.60	89,257.5	3.36
5 ha and over	25,358	0.75	193,956.9	7.31

Source: National Sample Census of Agriculture, 2001/2002, CBS

Table 3.1 shows the distribution of holdings by size. It is shown that the holding size is decreasing. In 2001/02 about 74 percent of the total holdings is less than one hectare in size compared with only 68.6 percent in 1991/92 (NSCA: 1991/92) It is heartening to note that, the holdings with no land had decreased in proportion from

1.17 percent in 1991/92 to only 0.79 percent in 2001/02. In contrast, holdings with 5 hectares and over have decreased from 1.47 percent in 1991/92 to only 0.75 percent in 2001/02.

The table 3.1 also indicates that land distribution in Nepal is highly skewed. There are large numbers of marginal and small farmers. About 92 percent of marginal and small farmers operate on 68.72 per cent of the total area whereas only 8 per cent medium and large farmers operate on 31.28 percent of the total area.

Comparative Data on Holdings-Censuses of Agriculture: 1961-2001

Comparative data on land holdings, area of holdings, average holding size and fragmentation of land are presented in the following table 3.2

Table 3.2: Comparative Data on Holdings in Nepal, 1961-2001

Category	Census Years				
	1961/62	1971/72	1981/82	1991/92	2001/02
Total holdings (000)	1540	1721.2	2194	2736.1	3364.1
% Increase	-	11.77	27.47	24.71	22.95
Area of holdings (000) ha	1685.4	1654.0	2463.7	2597.4	2654.0
% Increase/decrease	-	- 1.86	48.95	5.43	2.18
Average holding size (ha)	1.11	0.97	1.13	0.96	0.79
% Increase/decrease	-	- 12.61	16.49	-15.04	- 17.81
Number of parcels (000)	10318	12282.5	9516.4	10806.2	10987.4
% Increase/decrease	-	19.04	- 22.52	13.55	1.68
Average parcel per holding	6.8	7.2	4.4	4.0	3.3

Source: Ibid

There was an increase in the number of holdings between 1991/92 and 2001/02 by 22.95 percent. However, this increase has decelerated

Area of Holdings

The total area of holdings showed an increase in 2001/02 if compared with the trend between 1981 and 1991. The increase in the area of holdings in 2001/02 is also decelerating compared to the 1991/1992.

Size Average Holding

The average size of land holding has been decreasing since 1989/92 by 15 percent over 1981/82 and 17.8 percent between 1991/92 and 2001/02. This is expected when there are an increasing number of holdings without the corresponding increase in land area.

Fragmentation

- (a) Number of parcels – there was a minimal increase in the number of parcels by 1.68 percent in 2001 over 1991 compared with an increase of 13.55 percent in 1991 over the census of 1981.
- (b) Average parcel per holding – downward average trend is observed. The number of plots per holding is about 3.3.

From the figures presented in the above table 3.2 we find that the average size of land holding in Nepal is very small. Because of the increasing population and continuous subdivision and fragmentation, size of holdings is rapidly diminishing and becoming more and more uneconomic.

Land Use

Comparative data of land use, during the different Censuses of Agriculture, Nepal, 1961-2001 is presented in the following table 3.3

Table 3.3: Comparative Data on Land Use, 1961-2001

Category	Census Years				
	1961/62	1971/72	1981/82	1991/92	2001/02
Land use in hectares (000)	1961/62	1971/72	1981/82	1991/92	2001/02
Total area of the holding	1685.4(100)	1654(100)	2463.7(100)	2597.4(100)	2654.04(100)
Total Agricultural Land	1626.49(96.5)	1592.3(96.3)	2359.2(95.8)	2392.9(92.13)	2497.66(94.11)
Arable land	1591.9 (94.5)	1567(94.74)	2287.5(92.9)	2324.33(89.49)	2356.98(88.81)
Land under temporary crops	1550.5(92.0)	1537.1(92.93)	2250.2(91.33)	2284.67(87.96)	2326.12(87.64)
Other arable land	41.4(2.46)	29.9(1.81)	37.3(1.51)	39.7(1.53)	30.86(1.16)
Land under permanent crops	12.2(0.72)	15(0.91)	29.2(1.19)	29.39(1.13)	117.48(4.43)
Land under Perm. Pastures	22.3(1.32)	10.3(0.62)	42.5(1.73)	36.93(1.42)	19.75(0.74)
Ponds	n.a.	n.a.	n.a.	3.92(0.15)	3.45(0.13)
Non-agricultural land	59(3.50)	61.8(3.74)	104.5(4.24)	205.02(7.89)	156.38(5.89)

Source: National Census of Agriculture, Nepal, 2001/02

The table 3.3 above shows that the levels of estimates by major land uses seem to be expected. Non-agricultural land as part of the holding is decreasing compared to 1991 but land under permanent crops has increased significantly, which may be an indication of changing land use patterns. The increase in the magnitude of agricultural land came from the non-agricultural part of the holding, which is a plausible explanation.

Use of Inputs for Selected Crops

The table 3.4 below presents holdings using different inputs for selected crops during the agricultural censuses of Nepal, 1981/82 to 2001/02. Table 3.4 shows that there had been an increasing number of holdings engaged in the cultivation of temporary crops. In fact since 1981/82, the trend has been increasing through census years. This trend is also true in the use of inputs to increase production. These inputs are: use of improved seeds, and other inputs.

It is noticeable, however, that the use of improved seeds had proportionally decreased for wheat and maize and in the use of fertilizers, holdings raising wheat, sugarcane and vegetables had declined proportionally between 1991/92 and 2001/02.

3.4: Holdings Using Different Inputs for Selected Crops, Nepal

(1981/82 – 2001/02)

Inputs/Year	Temporary Crops						
	Paddy	Wheat	Maize	Potato	Sugarcane	Vegetable	Other Crops
Holdings with crops ('000' ha)							
1981/82	1021.7	649.5	838.6	193.2	60.3	324.2	n.a
1991/92	2037.5	1635.8	1872.6	734.7	82.6	763.1	2246.6
2001/02	2466.1	1934.4	2107.3	820.5	85.2	904.3	1888.6
% Increase of holdings							
1991/92 vs 1981/82	99.4	151.9	123.3	280.3	37.0	135.4	-
2001/02 vs 1991/92	21.0	18.3	12.5	11.7	3.1	18.5	- 15.9
Improved Seeds: % to total holdings with crops							
1981/82	3.2	4.8	2.4	1.0	3.0	n.a.	n.a.
1991/92	24.0	30.7	11.9	17.9	3.8	19.2	4.7
2001/02	25.3	30.0	9.2	27.1	31.3	32.4	6.7
Pesticides: % to total holdings							
1981/82	0.8	1.0	0.9	0.5	0.4	n.a.	n.a.
1991/92	13.2	5.4	2.8	10.7	23.5	7.1	1.9
2001/02	20.5	8.9	4.4	20.3	30.9	17.5	4.5
Chemical Fertilizers: % to total holdings with crops							
1981/82	16.0	26.9	5.1	7.7	14.3	n.a.	n.a.
1991/92	48.8	52.4	22.6	30.5	71.2	18.3	15.5
2001/02	51.8	43.7	31.5	33.3	50.9	12.0	19.0

Source: *Ibid*

Availability of Agricultural Credit

The table 3.5 below presents the number of holdings with agricultural credit by source.

Table 3.5: Number of Holdings with Agricultural Credit by Source, Nepal
(1991/92 –2001/02)

Source of credit	1991/92		2001/02		% Increase/ decrease of holdings with credit	% Change in 2001 over 1991
	Holdings with credit	Percent	Holdings with credit	Percent		
Total	622048	100	801,298	100	28.8	-
Sajha	42,956	6.91	32,462	4.05	- 24.4	- 41.3
ADB/N	204,952	32.95	227,124	28.34	10.8	- 14.0
CBs	44,581	7.17	31,092	3.88	- 30.3	- 45.9
NI	306,022	49.20	477,418	59.58	56.0	21.9

Source: National Census of Agriculture, Nepal 2001/02

Note:- NI= Non-institutional source

By source of credit, the above table 3.5 shows that there had been a decline in the flow of credit from the formal financial institutions. It is evident that the main source of credit among those who availed credit to finance their agricultural operations in 2001/02 is the non-institution type or the informal type of credit like private money lenders, relatives, etc. where almost 60 percent reported as having obtained credit from this source. Second in popularity is the Agricultural Development Bank where 28.3 percent have availed of loans although the trend in usage of this source is going downwards (-14 %).

Subsistence Agriculture

Nepalese agriculture is generally based on subsistence level. Commercial, collective and cooperative agriculture is very limited in the country. The chief objective of farming is to get the means of subsistence, i.e. food from agriculture. The commercial crops are grown in a very limited area and scale. Because of low productivity and very small size of landholdings, the agricultural production is enough only to meet the subsistence level. Therefore, there are only small numbers of farmers who have very high saving potentiality.

Agriculture Depends on Monsoon

Nepalese agriculture heavily depends on monsoon. The monsoon has the characteristic of indefinite rains, i.e., some times heavy rain, sometimes scanty rains which causes floods or drought on the one hand and on the other, there is indefinite period of rains i.e., sometimes early and sometimes very late which also causes an adverse effect on agricultural productivity. Thus it can be said that rains in Nepal is inadequate, uncertain and irregular. So the Nepalese farmers always look sky for rains because adequate irrigational facilities have not been made available so far. The total area under irrigation was 883 thousand hectares in 1991/1992 which increased to 1606.2 thousand hectares in 2001/02. The following table 3.6 shows area benefited with irrigation from the year 1961/62 to 2001/02.

Table 3.6: Area Benefited with Irrigation, Nepal, 1961/62 to 2001/02

Census years	Agricultural area ('000'ha)	Irrigated area ('000'ha)	Proportion of irrigated area to cultivated Area
1961/62	1626	537	0.33
1981/82	1592	584	0.25
2001/02	2654	1606	0.60

Source: *Ibid*

The above table 3.6 reveals that there is acute shortage of irrigational facilities in Nepal. Hence, there is heavy dependence on monsoon.

Excessive Pressure of Population on Cultivable Land

The cultivable land in Nepal is limited in extent whereas there is growing pressure of population due to rapid increase in the population. The annual rate of growth of population was 2.66 percent in 1981 and it is 2.24 percent per annum at present according to the census report of 2001. Out of total population 81 percent people are engaged in agricultural sector (CBS: 2001). The excessive pressure of population in agriculture is due to no remarkable development in secondary, i.e., industry and tertiary sector, i.e., trade, commerce and services in the country. The increasing pressure of population is badly affecting the agricultural productivity. The per capita holding area is declining whereas the density per holding is increasing. The holding area per head can be shown with the help of the following table 3.7.

Table 3.7: Holding Area Per Head of Population in Nepal, 1962 to 2001

Census Year	Total area of holding (000 ha)	Population (000)	Per capita holding area (ha)	Density per holding
1961	1685	9413	0.18	5.6
1972	1654	11556	0.14	7.0
1982	2464	15023	0.16	6.1
1992	2597	18491	0.14	7.1
2001	2654	23151	0.12	8.7

Source: *Ibid*

The above table 3.7 shows a decline in per capita holding area from 0.18 in 1962 to 0.12 in 2001 and an increase in the density per holding area from 5.6 in 1962 to 8.7 in 2001. So the figures as mentioned in the above table 3.7 explain that per capita land holding has declining tendency whereas there is rising tendency in density of population per land holding area. Thus, the pressure of population will go on increasing constantly, the problem of food and employment will arise which will obviously create a large number of problems in Nepalese economy.

Low Productivity in Agriculture

The Nepalese agriculture suffers from the low level of productivity. In terms of the output per hectare of land, agricultural productivity in Nepal is far below the level of agricultural productivity in developed countries. There are several factors, which are responsible for the low productivity of Nepalese agriculture, and they are technical, economic and social factors. Technically the Nepalese agriculture is too backward using the very old traditional primitive methods of cultivation because the majority of the farmers are marginal and small farmers who are economically very poor. They cannot afford to use the modern machines and other inputs of agriculture on the one hand and the very small size of average land holdings upon which the new agricultural implements cannot be applied. Thus, the use of old primitive instruments, traditional dominated life of the rural people is the important reasons for the low productivity of Nepalese agriculture.

Underemployment and Disguised Unemployment

The Nepalese agriculture virtually faces the problem of underemployment and the disguised unemployment. The reason for this grave situation is the fast growing

population and undeveloped state of secondary and tertiary sectors. The nature of agriculture is seasonal which provides seasonal employment to the workers. Due to inadequate irrigational facilities in the country very few farmers do double cropping. The large numbers of people who depend on agriculture do not get sufficient work in non-agricultural sector and thus they are compelled to remain in agriculture in disguised manner. The number of disguised unemployed is rapidly multiplying because of fast growing population on the one hand and comparatively very slow expansion of employment opportunities in the non-agricultural sector on the other.

Thus, the above-mentioned characteristics clearly reveal the fact that Nepalese agriculture is backward and there is uphill task for its proper and quick development.

3.3 General Introduction of the Area Selected for Study

In this study *Morang* District was purposively selected. The general introduction of this district is explained below.

Physical Features

Morang, the leading agricultural and industrial district of the Kingdom, is situated in the Koshi Zone of Eastern Region. The total area of this district is 1855 square km (CBS: 2001). The Headquarter of this district is Biratnagar, which is the only town of this district. The total number of VDCs is 65 and there is only one sub-metropolitan city, Biratnagar. The length of the district from north to south is 54 km. and its breadth is 46 km. *Illam* and *Jhapa* districts surround the district in the east and *Sunsari* district in the west. It has *Dhankuta district* in the north and *Araria* district of the Indian State of *Bihar* in the south. The district has plain surface. The altitude of the district is about 250-ft. above the sea level. *Ratuwa*, *Nuna*, *Bahra*, *Chisan*, *Lohandra* and *Shinghya* are the main rivers of the district, which run from north to south.

Climate

Though the district is a part of Terai, it has foothills in its northern side. The district has dense forest at some places. The temperature in the district varies from 34.90 C to 8.70 C. The average rainfall of the district varies between 40" and 60".

Population

The total population of the district is 843,220 as recorded in the population census of 2001 which is composed of races like *Limbu, Magar, Kshetriya*, Brahmin in the hill side and *Tharu, Rajabansi, Satar, Newar, Dhimal, Mushar, Marwadi* in the plain surface areas. The ratio of male and female population is 50.2: 49.8. The population density is 455 persons per square km. The main occupation of the district is agriculture. More than 88 (DAOM:2001) percent of the population depends on it for livelihood. More than 7 percent of the total population earns their livelihood from trade and industries. Remaining 5 percent depend on other various types of services. Besides, handicraft, artisanship and business are considered as the secondary occupation of the district.

Land Use Pattern

The total area of the district has been estimated at 1,81,689 hectares. The current land use pattern of this district is presented in the table 3.8 below:

Table 3.8: Current Land Use of Morang District

(In hectares)

Type	Area (In hectare.)	% of total
Covered by forest	55500	30.55
<i>Khet</i>	89480	49.25
<i>Pakho</i>	15790	8.69
Rock, highlands, uncovered land	11792	6.49
Area covered by residence	5059	2.78
Rivers, roads, canals, drains etc.	4068	2.24
Total	1,81,689	100.0

Source: District Agriculture Office, Morang (DAOM), 2001

The table 3.8 shows that of the total available land only 1,05,270 hectares of land are cultivable, i.e. only 57.94 percent area can be used for cultivation. Of the total cultivable land only 44,669 hectares of land (42.4 percent) have irrigation facility.

Cropping Pattern and Cultural Practices

Among food grains, paddy covers the largest area of the cultivated land. Wheat is the second after paddy. Maize, barley, grains, and pulses are also the popular crops among cereal grains. Jute, oilseed and sugarcane are the main cash crops of the district. Besides these, vegetables and fruit cultivation are also popular in the district. It has been estimated that food grains alone cover more than 60 percent of the total cultivated land and 40 percent is under cash crops. The area, production and productivity of major crops in Morang district in two fiscal years is presented in the following table 3.10 below:

Primitive methods of agricultural practices play a vital role in the district. The farmers have very little knowledge about the improved techniques of agricultural practices. Nevertheless, the district produces surplus food grains, which are exported mostly to India.

Institutions

The District Agricultural Office, *Morang* is engaged in the dissemination of knowledge about improved techniques of agriculture among the farmers. For the supply of improved seeds, fertilizers, pesticides and other improved equipments; there is a branch office of Agricultural Input Corporation (AIC) in the district. The district has two branch offices, one Sub-branch office, and two minor branch offices of Agricultural Development Bank. There are 10 Small Farmer Development Projects (SFDP), which also work under the Agricultural Development Bank. There are 7 branches of Rastriya Banijya Bank (RBB) and 8 branches of Nepal Bank Limited (NBL), which also provide loans to the farmers under the priority sector programme. There are also joint venture banks in the district but these banks do not provide loans to the small farmers. There are some cooperative societies working in the district.

Table 3.9: Area, Production and Productivity of Major Crops in Morang District

(Area: in hectare and Production: in m.t. per hectare)

Crop	Fiscal Year 1998/99			Fiscal Year 1999/2000		
	Area	Production	Productivity	Area	Production	Productivity
<u>1.Paddy</u>						
(a) Early	10050	31775	3.1	10250	37925	3.7
(b) Summer	870501	267344	3.07	87050	282912	3.25
2.Maize	14005	26858	1.89	14350	25560	1.78
3.Wheat	14950	32890	2.2	18990	46525	2.45
4.Millet	1325	1311	0.98	1340	1501	1.12
5.Oilseeds	8725	6264	0.72	8820	8991	1.02
6.Pulses	5203	3494	0.67	5950	3590	0.60
7.Jute	8125	11485	1.41	8137	11799	1.45
8.Sugarcane	1365	56647	41.5	1399	58758	42.0

Source: Ibid

Co-operative societies of the district are not functioning in a satisfactory manner. Some International organizations such as Plan International are also working in the rural areas.

3.4 Agro-Economic Situation of the Sampled Area

In this section an effort has been made to assess the general agro-economic situation of the sampled area based on field survey. First, we have presented the agricultural scenarios of the sampled areas and then the economic condition of farmers has been explained.

Cropping Pattern

Cropping pattern has a significant bearing on estimating the crop loan requirements. The pattern of rotation of crops in different areas differ according to the texture of soil, climatic conditions, uncertainty of monsoon, different temperatures, irrigation facilities available. As mentioned earlier, agriculture is a way of life in Nepal and the economic motive of maximum gain has not entered into their calculations.

Rice is the most important crop in Nepal It is also true for Morang district. The table 3.10 shows the cropping pattern in the sampled area as obtained in the field survey.

Table 3.10 : Cropping Pattern in the Sampled Area

Crops	Marginal	Small	Medium and large	Total
Early paddy	1.27(3.05)	28.27(11.67)	7.67(4.95)	37.21
Summer paddy	21.93(52.63)	101.39(41.86)	86.2(55.66)	209.52
Late paddy	0.95 (2.28)	20.25(8.36)	4.65(3.0)	25.85
Wheat	13.93(33.43)	69.10(28.53)	41.32(26.68)	124.35
Lentil	3.27(7.85)	15.17(6.27)	12.0(7.75)	30.24
Maize	0.32 (0.77)	8.02(3.31)	3.02(1.96)	11.36
Gross cropped area	41.67	242.2	154.86	438.53

Source: Field Survey, 2001

Note: Figures in Parentheses indicate the percentage of their totals

In the above table 3.10 we find that the area covered by rice is greater than the area covered by other crops grown by all type of farmers. Rice is grown in 62.17 percent of the total cropped area. After rice wheat comes which is grown in 28.38 percent of the total cropped area.

In the farms where irrigation facilities are not available summer paddy is grown as a wet season crop and is followed by lentil, mustard or wheat. In the lands where irrigation facilities are available all the year round, the best cropping pattern is early paddy followed by late paddy in the wet season and dry season winter crop of wheat. This pattern gives the highest yields of all the crops. The operational area, gross cropped area, total irrigated area and percentage of irrigated area to total cropped area in the sampled areas are presented in the table 3.11.

The table 3.11 shows that there are no irrigation facilities in the low developed area of the district. 89 per cent of the total cropped area in the moderately developed area has irrigation facilities. In the moderately developed area most of the farmers

use pumping sets to irrigate the fields. Similarly 83.56 percent of the total cropped area has irrigation facilities in the developed area of the district.

Cropping Intensity

Cropping intensity refers to the extent to which existing arable land is used for the cultivation of temporary crops. Cropping intensity is measured by the ratio of the area of all temporary crops sown on arable land to the total area of all arable land. Table 3.13 presented below shows that in the low developed area the cropping intensity of medium and large farmers was found to be 135.95 which was greater than the cropping intensity of marginal and small farmers. The low cropping intensity in the low developed area was due to the lack of irrigation facilities in this area. The majority of farmers in the low developed area were found to be that they had no their own bullock labour. They had to depend on others for cultivation and the cost of cultivation was greater than the return on winter crops. So they grew paddy only.

The table 3.12 shows that cropping intensity is highest in the developed area where irrigation is available all the year round. Cropping intensity is higher for the small farmers in the moderately developed area compared to marginal and medium and large farmers because most of the small farmers in this area are found to be tenants and they have to pay rent for the use of the land from the production of the year. Marginal farmers are unable to use sufficient amount bullock labour due to the lack of cash expenses required to hire for cultivation. Medium and large farmers are found to be content with what they produce. So they do not intend to produce more although they can produce more than what they are producing.

Table 3.11: Operational Area, Gross Cropped Area, Total Irrigated Area and Percentage of Irrigated Area to Total Cropped Area in the Sampled Area

Particulars	Low Developed Area			Moderately Developed Area			Developed Area			Total
	Marginal	Small	Medium and large	Marginal	Small	Medium and large	Marginal	Small	Medium and large	
No. of farms	18	42	15	18	42	15	18	42	15	225
Operational area (ha)	7.87	42.73	30.60	7.67	43.20	30.93	7.67	41.4	31.33	243.71
Gross cropped area (ha)	9.73	52.73	41.6	15.33	83.97	53.27	16.60	105.5	60.0	438.53
Irrigated Area (ha)	–	–	–	12.8	83.37	44.67	15.33	90.80	46.67	293.64
% of Irrigated area to total cropped area	–	–	–	83.5	99.0	83.86	88.0	85.74	76.92	67

Source: Computed from the field Survey data, 2001

Table 3.12 : Average Size of Farm and Cropping Intensity in the Sampled Area (All Farms)

Particulars	Low Developed Area			Moderately Developed Area			Developed Area			Total
	Marginal	Small	Medium and large	Marginal	Small	Medium and large	Marginal	Small	Medium and large	
No. of farms	18	42	15	18	42	15	18	42	15	225
Operational area (ha)	7.87	42.73	30.60	7.67	43.20	30.93	7.67	41.4	31.33	243.71
Gross cropped area (ha)	9.73	52.73	41.6	15.33	83.97	53.27	16.60	105.5	60.0	438.53
Average size of farm (ha)	0.44	1.02	2.04	0.43	1.03	2.06	0.43	0.99	2.09	1.08
Cropping Intensity	123.63	123.40	135.95	190.87	194.38	172.23	216.43	255.97	191.51	180

Source: Computed from the field survey data, 2001.

3.4.1 Economic Position of Farmers In the Sampled Area

Size of Operational Holding

The size of operational holdings is the main indicator of both the size of the farm business as well as the economic position of the farmer. It is hoped that the classification based on the size of operational holdings may make possible a comparative study of the performance of farmers with different economic position. Table 3.13 gives the average size of cultivated holding among the three classes of farmers, viz., marginal, small and medium and large.

Table 3.13 : Average Size of Operational Holding in the sampled area.

Class of farmers	Average size of holdings (ha)
Marginal farmers	0.43
Small farmers	1.01
Medium and large	2.06
Overall	1.08

Source: Field Survey, 2001

It may be noted from the above table 3.13 that the overall size of operational holding per farm family is 1.08 hectares. The estimate was 1.92 in 1980 (NRB: 1980). The average size of operational holding of the medium and large farmers and small farmers is worked out as 2.06 and 1.01 hectares respectively and that of the marginal farmers as 0.43 hectares.

We may now take into account the differences in the structure of cultivated holdings in terms of land owned and land taken on lease. The discussion of pattern of land holding is important because the nature of interest in land affects the inclination to carry out long-term projects on land. It also determines the capacity to borrow. The pattern of land holding among the three groups of farmers is presented in the table 3.14 below:

Table 3.14: Pattern of Land Holding in the sampled area.

(In Percent)

Classes of farmers	Owned	Rented	Share cropper
Marginal farmers	44.44	38.06	17.5
Small farmers	45.97	35.56	18.47
Medium and large	72.22	17.28	10.5
All families	54.21	30.30	15.49

Source: Computed from the survey data, 2001

Table 3.14 reveals pattern of land holding among the three groups of farmers. An examination of the data included in the table shows that of the total operational land holding, 54.21 percent farm land are identified as owned land, followed by 30.30 percent as land operated under tenancy and 15.49 percent as land operated under sharecropping.

It is important to note that the proportion of land operated under tenancy increases from large to marginal farmers. The proportion of land owned decreases from large to marginal cultivators. The relatively larger proportion of land operated under tenancy in the case of marginal and small farmers show their weak economic position.

Value of Assets

Here we have presented the average value of assets of the three classes of farmers in the three areas according to the level of development. The average value of assets of the three classes of farmers in the three areas and overall average value of assets are presented in the following tables 3.15, 3.16, 3.17 and 3.18.

Table 3.15 : Average Value of Assets in the sampled area.

(Low Developed Area)

(In Rs.)

Classes of Farmers	Total assets	Owned land	Building	Livestock	Implements	Financial assets
Marginal	42153.00 (100)	28756.78 (68.22)	7477.94 (17.74)	4531.45 (10.75)	421.53 (1.00)	985.00 (2.29)
Small	207735.48 (100)	156320.95 (75.25)	21895.32 (10.54)	15580.16 (7.5)	4362.44 (2.1)	9567.61 (4.61)
Medium and large	403786.67 (100)	284911.87 (70.56)	46677.78 (11.56)	34321.87 (8.5)	17443.58 (4.32)	20431.00 (5.06)

*Source: Field Survey, 2001**Note: Figure In parentheses is percentage to total***Table 3.16 : Average Value of Assets in Moderately Developed Area**

(In Rs.)

Classes of Farmers	Total assets	Owned land	Building	Livestock	Implements	Financial assets
Marginal	96157.78 (100)	68800.89 (71.55)	14760.22 (15.35)	7269.53 (7.56)	2577.03 (2.68)	2750.11 (2.86)
Small	211303.12 (100)	146961.32 (69.55)	30681.21 (14.52)	21806.48 (10.32)	7395.61 (3.5)	4458.5 (2.11)
Medium and large	674844.00 (100)	424341.91 (62.88)	57767.65 (8.56)	84760.40 (12.56)	44269.77 (6.56)	63705.27 (9.44)

*Source: Field Survey**Note: Figure in parentheses is percentage to total***Table 3.17 : Average Value of Assets**

(Developed Area)

(In RS.)

Classes of Farmers	Total assets	Owned land	Building	Livestock	Implements	Financial assets
Marginal	147868.06 (100)	109644.12 (74.15)	15718.37 (10.63)	12761.01 (8.63)	5175.38 (3.54)	4509.97 (3.05)
Small	224380.00 (100)	135929.40 (60.58)	34913.53 (15.53)	28384.07 (12.65)	10231.73 (4.56)	14921.27 (6.65)
Medium and large	848300.00 (100)	621210.00 (73.29)	55478.82 (6.52)	57345.08 (6.76)	36646.56 (4.32)	73377.00 (8.65)

*Source: Field Survey**Note:- Figure in parentheses is percentage to total*

Table 3.18: Average Value of Assets of all the Farm Families in the Sampled Area

(In Rs.)

Classes of farmers	Total assets	Owned land	Building	Livestock	Implements	Financial assets
Marginal	95392.95 (100)	69067.26 (72.40)	12652.18 (13.28)	8187.33 (8.58)	2724.65 (2.86)	2748.36 (2.88)
Small	214472.87 (100)	146403.89 (68.28)	29163.35 (13.58)	2193.57 (10.22)	7329.93 (3.42)	9649.12 (4.5)
Medium and large	642310.22 (100)	418593.54 (65.17)	53308.08 (8.3)	58809.12 (13.12)	32786.64 (5.10)	52504.4 (8.17)
All Farm families	317392.01 (100)	2177944.4 (68.62)	37198.34 (11.72)	33929.21 (10.69)	12029.16 (3.79)	16440.91 (5.18)

Source: Field Survey, 2001

Note: Figure in parentheses is percentage to total

By comparing the average value of total assets of the three classes of farmers in the three areas we find that the average value of total assets of all classes is increasing when we move from low developed area to developed area. The reason for the differences in the average value of assets is due to the differences in the prevailing prices of land during the survey period in the three areas. The per hectare selling price of land in the three areas during the survey was found to be Rs. 300000, Rs.450000, and Rs.800000 respectively.

It is important to note that the economic status of the same class of farmers is also different according to the level of development. The average value of total assets of the marginal farmers is Rs.42153 in the low developed area, Rs.96157.78 in the moderately developed area and Rs.147868.06 in the developed area. This indicates that the borrowing capacity of the farmers in different areas is also different.

It may be seen from the table 3.18 that the value of assets per family decreases as we move from large to marginal farmers. The overall average amount of assets of the medium and large size group is found to be Rs.642310.22 and that of the small and marginal size groups is Rs. 214472.87 and Rs.95392.95 respectively. Thus strong economic position of the medium and large farmers is clear from the data presented in the table 3.18.

Of the total assets owned by the farm families, land constitutes 68.62 percent. This indicates that land is the most important asset of the farm families. It may be noted that the share of land and building is over 80 percent of the value of total assets for the two groups except medium and large farmers. The proportion of value of land decreases as we move from medium and large to marginal farmers.

Generally, livestock and building assume proportionately greater importance for small and marginal farmers. For all the three groups, the proportion of the value of assets such as financial assets (cash in hand, gold etc) is below 6 percent. After land and building, the asset in order of importance for the three size groups is livestock, financial assets and implements. The proportion of implements is found below 4 percent (Table 3.18), which indicate that the farmers are not using adequate modern techniques of production in their farms. The proportion of the value of implements decreases with the decline in the size of cultivated holdings. Similarly the proportion of financial assets is also decreasing with the decline in the size of cultivated holdings.

Gross Family Income

In this section, we propose to examine the gross and net family income among the three groups of farmers in the three areas according to their level of development. Income from both farm and non-farm is by no means less important in determining the economic position of farmers. The share of farm and non-farm income of the three classes of farmers according to the level of development and the overall income of the farmers are presented in the following tables 3.19, 3.20, 3.21 and 3.22.

Table 3.19 : Share of Farm and Non-Farm Income on Gross Family Income
(Low Developed Area)

(In Rs.)

Classes of farmers	Average gross family income	Average gross farm income	Average non-farm income	Average proportion of farm income In gross Income	Average proportion of non-farm income In gross income
Marginal	27414.11	9536.33	17877.8	34.79	65.21
Small	42410.12	22667.74	19742.0	53.44	46.55
Medium and large	57634.0	43660.67	13973.3	75.76	24.24

Source: Field Survey, 2001

Table 3.20: Share of Farm and Non-Farm Income on Gross Family Income in the sampled area.
(Moderately Developed Area)

(In Rs.)

Classes of farmers	Average gross family income	Average gross farm income	Average non-farm income	Average proportion of farm income in gross income	Average proportion of non-farm Income in gross income
Marginal	40990.0	21233.0	17877.8	51.78	48.22
Small	67436.93	46723.24	19742.0	69.28	30.72
Medium and large	94812.0	82588.0	13973.3	87.11	12.89

Source: Field Survey

Table 3.21 : Share of Farm and Non-Farm Income on Gross Family Income in the sampled area.

(Developed Area)

(In Rs.)

Classes of farmers	Average gross family income	Average gross farm income	Average non-farm income	Average proportion of farm income In gross income	Average proportion of non-farm income In gross Income
Marginal	41950.0	21250.0	20700.0	50.66	49.34
Small	70550.0	48751.0	21799.0	69.10	30.94
Medium and large	95203.33	83807.0	11396.0	87.78	12.22

Source: Field Survey, 2001

Table 3.22 : Share of Farm and Non - Farm Income on Gross Family Income in the sampled area.

(All Farm Families)

Classes of farmers	Average gross family income	Average gross farm income	Average non-farm income	Average proportion of farm income in gross Income	Average proportion of Non-farm income In gross income
Marginal	36784.0	17339.78	19444.22	47.14	52.86
Small	60132.35	39380.66	20751.69	65.49	34.51
Medium and large	82549.78	70018.0	12531.78	84.82	15.18

Source: Field Survey, 2001

Tables 3.19, 3.20 and 3.21 give share of farm and non-farm income on gross family income in three areas and table 3.22 gives the combined share of farm and non-farm income of all the farm families in the sampled area. The farm income consists of income from crops, livestock and horticulture. Non-farm income includes income from wages, land rent, income from salary, house and shop rent, interest etc. It may be noticed from the above tables that the annual average farm income of the farmers vary in the three areas, low developed, moderately developed and developed area. The annual average income of the marginal farmers is found to be increasing when we move from low developed area to developed area. It is found that this difference in income is due to the difference in the cropping intensity of land. In the low developed area, generally the farmers grow crop once a year whereas in the moderately developed area they grow crops twice a year. Similarly, in the developed area they grow crops three times a year. But it is also found that only the marginal farmers who own a pair of bullock grow crops more than once. Therefore, it is important to note that the ownership of the bullock also affects the cropping intensity of the farmers.

It is important to note that the non-farm income is proportionately more important among the marginal farmers. It is because their size of land is very small and they have to depend on outside income, mainly wage income, for their livelihood. The proportion of farm income is 65.49 and 84.82 for small and medium and large farmers respectively. As the medium and large cultivators have relatively larger size of cultivated holdings, they have higher income from their farm business.

Net Family Income

After we have discussed the gross family income, it is important to deal with the net family income among the three groups of farmers. The net income of the farm families is arrived by deducting the fixed costs from the gross income. Land revenue, rent and the cost of permanent labour have been considered as fixed costs since these costs are paid on an annual basis and cannot be appropriated correctly for different crops grown by the farmers in a year.

It may also be noted that the main products, which are easily sold at the market, are valued at the then prevailing market price during the survey and the value of those products is considered as cashable income. The difference between the gross cashable income and the cash costs, is, therefore treated as net cashable income. The annual average family net income for all farm families is presented in the table 3.23 below:

Table 3.23 : Annual Average Family Net Income by Size Group

(In Rs.)

Classes of farmers	Gross income	Fixed costs	Net income
Marginal	36784.0	1949.75	34834.25
Small	60132.85	3975.93	56156.42
Medium and large	82549.78	5734.77	76815.0

Source: Field Survey

Table 3.23 gives data on the annual average family net income among the three groups of farmers. It may be seen from the table 2.60 that the annual average net family income of the marginal, small and medium and large farm families during the survey period stood at Rs. 34834.25, Rs.56156.42 and 76815.01 respectively.

The annual average fixed cost of the medium and large farm families is the highest (Rs. 5734.74) followed by small farmers (Rs.3975.93) and marginal farmers (Rs.1949.75). It is interesting to note that there is a close relationship between the net family incomes and the size of cultivated holding. The annual average family net income decreases substantially from medium and large to marginal farmers. Like the net family income the fixed cost also decreases from the medium and large to the marginal cultivators.

Thus, we have assessed the economic position of these three groups of farmers on the basis of assets; gross family income and net family income. It is clear from the discussion that the medium and large size farm families are better off as compared to small and marginal farmers.

The predominance of the medium and large cultivators over the small, and that of the small over the marginal farmers has been adequately proved by the data discussed above.

3.5: A Resume

In the light of the above discussion, the salient agro-economic features of the economy, the district and the sampled area may be recapitulated here. These features are:

- Agriculture is the mainstay of the economy. But it is characterized by the dominance of food crops in the cropping pattern.
- Nepalese agriculture is of subsistence nature.
- There is predominance of marginal and small farmers among the peasantry.
- The adoption of scientific farming is very low.
- The productivity of crops is also very low.
- The farmers are in need of credit for agricultural operations and for consumption purpose also.
- The average income of the same size class of farmer is different in different areas according to level of development.