CHAPTER -5

SOCIO-ECONOMIC STATUS OF FOREST VILLAGERS AND ITS IMPACT ON INCOME FROM FOREST PRODUCTS

Chapter- 5

Socio-Economic Status of Forest Villagers and Its Impact on Income from Forest Products

5.1 Introduction

Socio-Economic Status (SES) is a composite measure of an individual economic and sociological standing. It is a complex assessment measure in a variety of ways that account for a person's working experience and economic and social position in relation to the others, based on income, education and occupations. Examinations of socio-economic status often reveal the inequities in access to resources, plus issues related to privilege, power and control (American Psychological Association, 2007).

Socio-economic status is typically broken into three levels, viz. high, middle, and low SES, to describe the three places of a family or an individual. While by placing a family or the individuals into one of these categories, any or all of the three variables income, education, and occupations can be assessed (https://en.wikipedia.org). Low SES is related to lower educational achievement, poverty and poor physical and mental health problems, which ultimately affect our society.

In the present chapter, the socio-economic and demographic pattern of forest dwellers has been explained. The socio-economic status and demographic pattern are examined through their occupation, literacy, landholding, family size, caste, age, sex, house type, use of fuel wood, and cattle ownership. Also, income from the collection of forest resources, as shown in Chapter 4, was regressed by several explanatory variables like occupation, educational level, family size, landholding etc., to examine the impact of factors on the dependence of forest resources in the study area.

5.1.1 Objective

The present chapter has taken the following objective to assess the socio-economic and demographic status of households of the sample forest villages. For these, the caste system, family size, age, gender, educational qualification, occupation, use of firewood, housing type, etc., has been described. Again, regression analysis was used to see the relationship between forest revenue and socio-economic variables.

5.1.2 Methods of Study

The study is done on the basis of the sample household drawn from the three forest division of Kokrajhar district, as shown in Chapter 3. Out of eighteen sample villages of three forest divisions, information has been collected from 365 sample households in the month of November and December 2017. The researcher used descriptive statistic such as average, percentage, trend line to examine the socio-economic and demographic variables. And finally, regression analysis was used to check the association of socio-economic variables with total forest income.

5.2 Socio-economic Profile of the Forest Villagers

The socio-economic and demographic status of the forest villagers of Kokrajhar district were mainly based on the study of population, caste, family size, age, gender, literacy rate, occupation, use of firewood, housing type, etc.

The population size and its sex composition, as observed from the Census of India 2011, are displayed in table 5. 1. The total population of the eighteen sample villages is 21072; out of this, 10770 are males, and 10302 are females. The average sex ratio of the district is in favour of female in the surveyed villages, which is higher than the all India level and Assam. Excluding five sample villages, which are lower than the national sex ratio of 940, all the eleven villages of the three forest divisions have a higher sex ratio than the all India level. Hakwma under the Parbathjora forest division had the highest sex ratio 1082 among the eighteen surveyed villages; secondly, Dumbazar under the Kachugaon

forest division had sex ratio of 1027, and the third sex ratio is 1026 in Ultapani under the Haltugaon forest division. Maderkuthi under the Parbathjora forest division has the lowest sex ratio 864. Thus, Hakwma and Maderkuti of the Parbathjora forest division had the highest and the lowest sex ratio among the sample villages. The reasons for the higher sex ratio are understood from the early marriage, poverty and illiteracy in rural areas of the study area.

Table No.5.1

Size of Population and Sex ratio of sample village (as per Census 2011)

Villages	Pop. Size	Males	Females	Sex Ratio per 1000 Male
Bongaon	1159 (5.50)	580 (5.39)	579 (5.62)	998
Nandipur	835 (3.96)	427 (3.96)	408 (3.96)	956
Bollamhjora	1798 (8.53)	938 (8.71)	860 (8.35)	917
Raimona	1169 (5.55)	601 (5.58)	568 (5.51)	945
Dumbazar	1342 (6.37)	662 (6.15)	680 (6.60)	1027
Nabinagar	1797 (8.53)	896 (8.32)	901 (8.75)	1006
Bijoynagar	809 (3.84)	417 (3.87)	392 (3.81)	940
Peripur	183 (0.87)	91 (0.84)	92 (0.89)	1011
Islampur	603 (2.86)	308 (2.86)	295 (2.86)	958
Athiabari	2055 (9.75)	1066 (9.90)	989 (9.60)	928
Gugujhora	550 (2.61)	274 (2.54)	276 (2.68)	1007
Hakwma	808 (3.83)	388 (3.60)	420 (4.08)	1082
Manderkuti	1465 (6.95)	786 (7.30)	679 (6.59)	864
Satyapur	937 (4.45)	474 (4.40)	463 (4.49)	977
Saralpara	3486 (16.54)	1808 (16.79)	1678 (16.29)	928
Ultapani	766 (3.64)	378 (3.51)	388 (3.77)	1026
Bhur	237 (1.12)	126 (1.17)	111 (1.08)	881
Khungring	1073 (5.09)	550 (5.11)	523 (5.08)	951
Total	21072 (100.00)	10770 (100.00)	10302(100.00)	

Source: Census of India, 2011

Note: The figures in brackets indicate percentages to the total population of the eighteen sample villages.

5.3 Family size

From table 5.2, it is observed that the family size in the sample villages as obtained by the primary data is 5.38 persons per family. Out of this the number of males and females comprised of 2.84 and 2.54 persons respectively. The average family size of sample households of Kachugaon forest division is 5.19, the average family size of Parbathjora forest division is 5, and finally, the average family size of Haltugaon forest division is 6 persons respectively. Among the three forest division, the Parbathjora forest division has the lowest average family size per family, and the Haltugaon forest division has the highest average family size. Therefore, it is clear from Table 5.2 that the family size of sample households of the Haltugaon forest division has comparatively highest among all the forest divisions. The higher family size is due to the low literacy rate in the Haltugaon forest division compared to Parbatjhora and Kachugaon forest division.

Table No.5.2

Average family size of the sample household

Forest Division	Persons	Male	Female
Kachugaon FD	1059 (5.19)	573 (2.80)	486 (2.38)
Parbathjora FD	330 (5.00)	164 (2.48)	166 (2.51)
Haltugaon FD	577 (6.07)	301 (3.16)	276 (2.90)
Total (Average of Sample)	1966 (5.38)	1038 (2.84)	928 (2.54)

Source: Compiled from primary data

Notes: The figure in the brackets indicates the average family size of the sample households.

5.4 Age of the family head of the sample households

The age of the sample respondents has been divided into two categories- age group between 15-59 years and 60 years and above (table 5.3). The table

shows that more than 65 per cent responded in the age group between 15-59 years, and about 35 per cent of respondents are above the age of 60. However, among the three forest division, the Kachugaon forest division has the highest percentage (66.50 %) of people between the age group of 15-59 years and the lowest percentage (33.49 %) of people above the age groups of 60 years and above (table 5.3 and figure 5.1). On the other hand, the Parbatjhora forest division has the highest percentage (37. 31%) of the age group of 60 years and above and the lowest percentage (62.68%) of 15 -59 years of age. From the table 5.3, it is also observed that the Haltugaon forest division has the highest percentage of the age group of 60 years and above and the lowest percentage of 15 -59 years of age. Thus, more percentage of older peoples means more dependent on their earning members of the family.

Table No.5.3

Age of the family head of the sample household (in percentage)

Forest Division	Age between 15-59 years	60 years and above
Kachugaon FD	135 (66.50)	68 (33.49)
Parbathjora FD	42 (62.68)	25 (37.31)
Haltugaon FD	60 (63.15)	35 (36.84)
Total	237 (64.93)	128 (35.06)

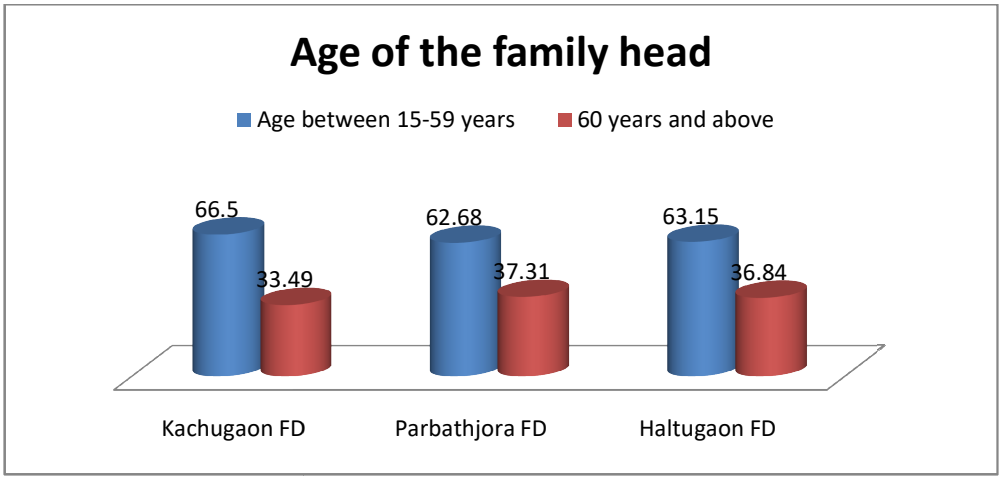
Source: Compiled from primary data

Notes: The figure in the brackets indicates the percentage of the age of the family head of the sample households.

Figure 5.1 shows the age of the family head of the sample households of three forest divisions. In case of age group of 15-59 years, 66.50 percent of peoples are in Kcahugaon forest division and in age group of 60 years and above 37 percent is live in Parbathjora forest division. Thus it is clear that majority age group of 15- 59 years is found in Kachugaon forest division and 60 years and above age group is found in Parbothjora Forest division.

Figure No.5.1

Age of the family head of the sample household



Source: Compiled from primary data

5.5 Gender of the Sample households

From table (5.4), it is observed that ninety-nine per cent head of the family of sample households are male, and merely one per cent is female. In terms of division wise, the Haltugaon forest division has represented by hundred per cent male populations in its households. Simultaneously, Kachugaon and Parbatjhora forest divisions were also represented only by a negligible percentage of the female population. Therefore, it shows that the majority of the family is head by the male population due to the patrilineal line of inheritance in the study area.

Table No.5.4

Sex of the family head of the sample household (in percentage)

Forest Division	Male	Female
Kachugaon FD	200 (98.53)	3(1.47)
Parbathjora FD	66 (98.48)	1(1.52)
Haltugaon FD	95 (100)	0 (0.00)
Total	361 (99.00)	4(1.00)

Source: Compiled from primary data

Notes: The figure in the brackets indicates the percentage of sex of the family head of the sample households.

5.6 Caste/Community pattern of Sample village

As mentioned in the methodology, there are Schedule Tribe (Bodo, Rabha, Garo and Lalung), SC, OBC (Oraon, Santhal, Munda, Kol, Rajbonghi), and General (Nepali, Bengali) people are residing side by side in forest villages of Kokrajhar district.

From the sample household's data of three forest division, it is seen that 68.22 per cent of forest dwellers are Schedule Tribe, followed by 22.46 per cent of OBC and 8 per cent of the general category and negligible percentage of SC categories. Out of these three forest divisions, 73.89 per cent Schedule Tribe population is concentrated in the Kachugaon forest division, followed by Parbathjora and Haltugaon forest division (table 5.5 & figure 5.2). In the case of the General castes, 29.47 per cent is concentrated in the Haltugaon forest division. The reason was that the Nepali Community has settled in this forest as grazier during the earliest days of forest villages. Again, in the case of OBC, 29.85 per cent of the population is found in the Parbathjhora forest division due to the close proximity of Tea gardens.

Table No.5.5

Caste/Community pattern of sample households (in percentage)

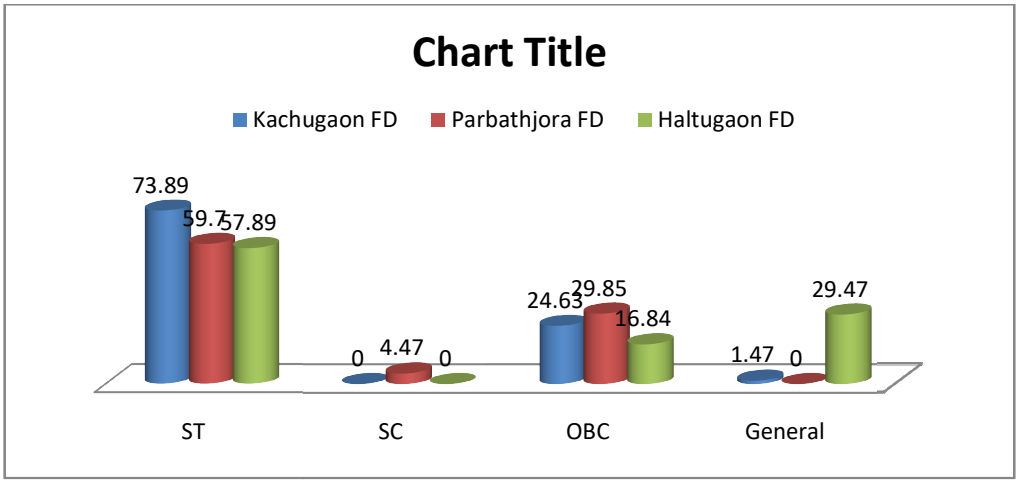
Forest Division	ST	SC	OBC	General	Total (% of Sample FD)
Kachugaon FD	150 (73.89)	0 (0.00)	50 (24.63)	3 (1.47)	203 (55.61) 100
Parbathjora FD	44 (59.70)	3 (4.47)	20 (29.85)	0 (0.00)	67(18.35) 100
Haltugaon FD	55 (57.89)	0 (0.00)	12 (16.84)	28 (29.47)	95(26.02) 100
Grand Total (% of Sample)	249 (68.22)	3 (0.82)	82 (22.46)	31 (8.49)	365 (100) 100

Source: Compile from primary data

Note: The figure in the parenthesis represents the percentage of the concerned figure

Figure No.5.2

Caste/Community pattern of sample households (in per cent)



Source: Compile from primary data

5.7 Literacy

The literacy rate of the family head of sample households is shown in the table 5.6. From table (5.6), it is observed that total literacy in the sample village is 58.35 per cent which is lower than national as well as state-level of 74.04 and 72.19 per cent respectively (Census, 2011). Out of the three forest division, Parbathjora has the more literate person as against the two forest divisions, and the Haltugaon division has more illiterate persons than the other two forest division. In the Parbothjhora forest division, 62.69 per cent are literate, out of which 29.85 per cent are lower primary passed, 14.93 per cent are Middle English (ME) School passed, 11.94 per cent are high school passed, 4.47 per cent are higher secondary passed but less than 1.49 per cent are graduates. It was followed by Kachugaon forest division with 59.11 per cent population are literate, out of which 24.63 per cent are just literate, 12.32 per cent are Middle English (ME) School passed,16.25 per cent are high school passed, 3.94 per cent higher secondary passed and only 1.97 per cent is graduates. Haltugaon forest division recorded 53.68 per cent literate, out of which 30.53 per cent just literate, 11.58 per cent are Middle English

(ME) School passed, 8.42 per cent are high school passed 2.11 per cent are higher secondary passed and 1.05 per cent is graduates. This shows that the literacy rate of forest villages of three forest divisions is more than 58 per cent, but the majority of literate people is just LP, ME and High school pass only, as against only negligible percentage have higher education.

In case of illiteracy, overall 42 percent is illiterate in the three forest divisions of the district. In division wise, 40.89 percent in Kachugaon , 37.31 percent in Parbathjora and 46.32 percent in Haltugaon are illiterate in the three forest divisions (table 5.6) . Thus Parbathjora has the lowest percentage of illiteracy rate comparing to Haltugaon and Kachugaon forest division. This is because Parbathjora forest division is nearest to Gossaigon Sub-divisional Town may be the reason for lower percentage of illiterate people.

Table No. 5.6

Educational qualification of the family head of the sample households (in percentage)

Forest division	Literate					Illiterate	Total (% of the sample)
	LP (Up to Class-IV)	ME (Class-V-VII)	H School (Class-VIII-X)	HS (Class-XI-XII)	BA and above		
Kachugaon FD	50 (24.63)	25 (12.32)	33 (16.25)	8 (3.94)	4 (1.97)	83 (40.89)	203 (55.61) 100
Parbathjora FD	20 (29.85)	10 (14.93)	8 (11.94)	3 (4.47)	1 (1.49)	25 (37.31)	67(18.36) 100
Haltugaon FD	29 (30.53)	11 (11.58)	8 (8.42)	2 (2.11)	1 (1.05)	44 (46.32)	95(26.03) 100
Grand Total (% of the sample)	99 (27.12)	46 (12.60)	49 (13.42)	13 (3.56)	6 (1.64)	152 (41.64)	365 (100) 100

Source: Compiled from primary data

Note: The figure in the brackets represents the percentage of the concerned figure.

5.8 Land Holding

The average total land holdings of the sample households of three forest divisions are 1.75 hectare. In terms of percentage-wise uses of land holding, 47.22 per cent of Khas/forest lands were used by sample households of Haltugaon forest division, 26.70 per cent by Kachugaon and 23.18 per cent by Parbathjora forest divisions, respectively (Table 5.7 and figure 5.3). However, both Kachugaon and Parbathjora forest divisions have more than 73 per cent of title /allotted land both for agriculture and residential (non-mortgage able) by the government, whereas only 53 per cent of land is allotted for the Haltugaon forest division. Therefore, it is clear that the Haltugaon division has encroached more to forest areas than Kachugaon and Parbathjora forest division.

Table No.5.7

Landholding of the sample household (in Hectare)

Forest Division	Khas land	Title Land (Non- mortgageable)	
	Forest land	Agriculture land	Residential land
Kachugaon FD	86.35(26.70)	184.21(56.95)	52.88 (16.35)
Parbathjora FD	23.83 (23.18)	62.25 (60.55)	16.73 (16.28)
Haltugaon FD	100.13 (47.22)	88.62(41.79)	23.29(10.98)

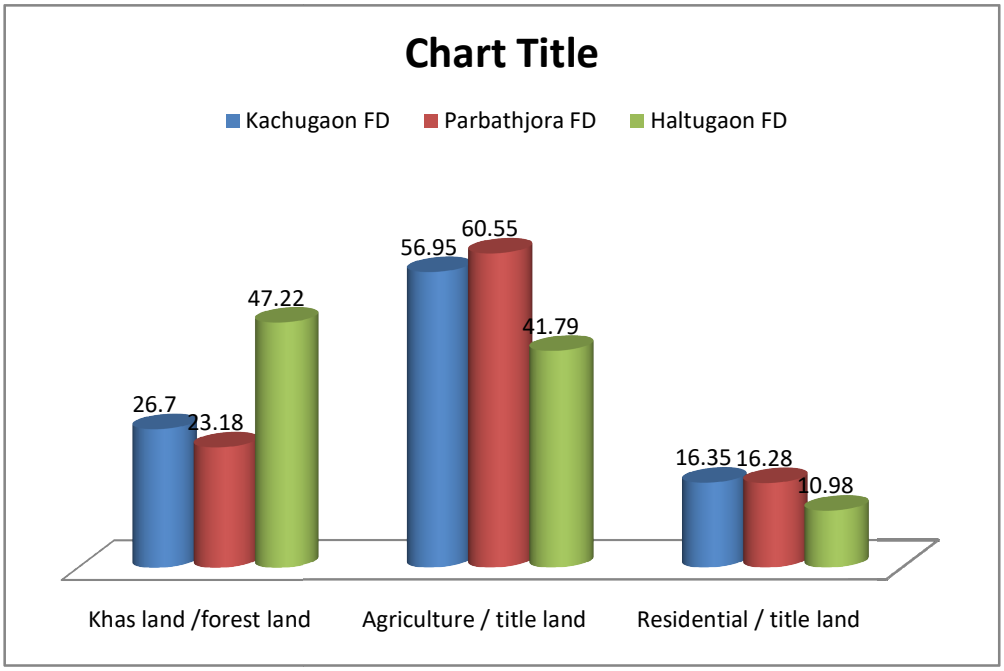
Source: Compiled from primary data

Notes: 1 Bigha = 0.13387 hectares

The figure in the brackets represents the percentage of the concerned figure.

Figure No.5.3

Landholding of the sample household (in percent)



Source: Compiled from primary data

5.9 Occupation

From table 5.8, it is observed that 79.72 per cent of households are engaged in agriculture, merely 3.83 per cent in services, and 2.74 per cent is based on business activities, and the remaining 13.69 per cent is based on wage labourer. Out of that, in Kachugaon forest division, 79.41 per cent are engaged in agriculture, 3.92 per cent of households are engaged in service, 2.45 per cent in business activities, and 14.22 per cent are in agricultural labourers. In the Haltugaon division, 80 per cent in engaged in agriculture activities, 3.15 per cent are engaged in service sector, 6.31 per cent in business activities and 11.58 worked as wage labourers. Again, in the Parbthjora forest division, 80.30 per cent are engaged in agriculture activities, 3.03 per cent head of the household is engaged in service, 1.52 per cent is in business, and the remaining 15.15 per cent of the head of the household are engaged as agricultural labour, respectively.

Therefore, it is clear that in terms of households' business activities, Haltugaon forest division is comparatively more advanced than the other two forest divisions. It is because Saralpara and Ultapani forest village under Hatugaon forest division is inhabited by the Nepali community, and they have been traditionally known as the grazier community during the British period (Handique, 2004).

Table No. 5.8

Occupation of the sample households (in percentage)

Forest division	Cultivator	Service	Business	Wage Labour
Kachugaon FD	162(79.41)	8(3.92)	5(2.45)	29(14.22)
Parbathjora FD	53(80.30)	2(3.03)	1(1.52)	10(15.15)
Haltugaon FD	76(80.00)	4(3.15)	4(6.31)	11(11.58)
Total	291(79.72)	14(3.83)	10(2.74)	50 (13.69)

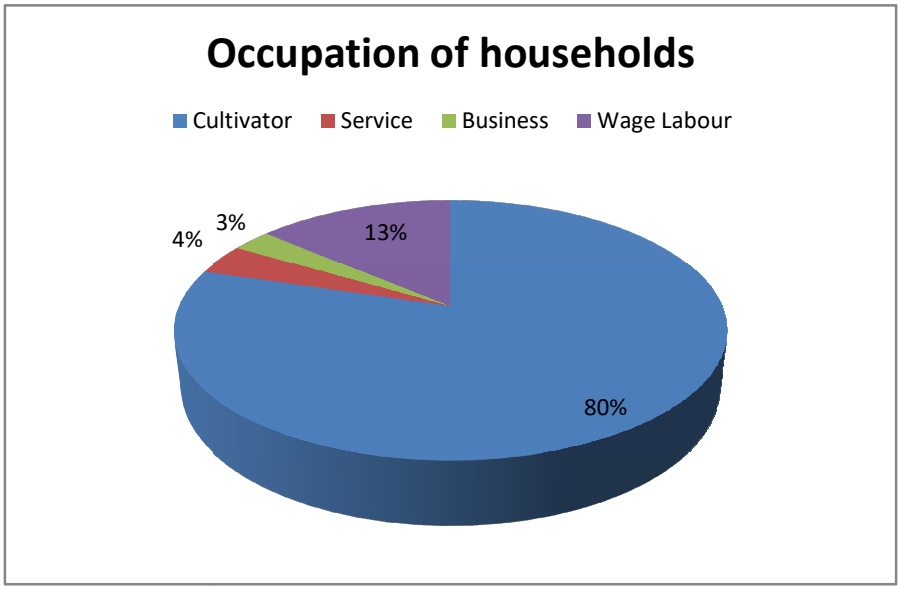
Source: Compiled from primary data

Notes: The figure in the parenthesis represents the percentage of the concerned figure.

From table 5.8 and figure 5.4, it is also observed that agriculture is the main occupation of sample households of forest dwellers of the three forest division of Kokrajhar district. More than 80 per cent of households depend on agriculture, followed by wage labourers. The lack of alternative job opportunities in these areas may be the reasons for the high percentage of engagement in agriculture.

Figure No.5.4

Occupation of the sample households (in percentage)



Source: Compiled from primary data

5.10 Type of House

The majority of the sample families live in the Kutcha house, and only a small fraction of them live in the pucca house (table 5.9). For the construction of the Katcha house, almost all the raw material such as pole, timber, leaves were collected from the nearby forest either by the head of the households himself, including family members or purchase from others.

Table No.5.9

Type of house of the sample households (in percentage)

Forest division	Kutcha house	Pucca house
Kachugaon FD	197(96.57)	7(3.43)
Parbathjora FD	64 (96.97)	2(3.03)
Haltugaon FD	93(97.89)	2(2.11)
Total	354(96.98)	11(3.01)

Source: Compiled from primary data

Note: The figure in the brackets represents the percentage of the concerned figure.

5.11 Use of Energy

From the Table 5.10, it is observed that 98 per cent of the sample household used fuel wood for their daily energy requirement. The main reasons for using firewood by the households are the easy access and availability of firewood in the nearby forest. They can either collect themselves or purchase from others. Comparatively, the cost of fuel wood in the sample village is cheaper than the other modes of energy such as LPG, Kerosene etc. Therefore, it is clear that the bulk of fuel wood extraction from the forest is associated with daily energy requirement of the household's.

Table No.5.10

Use of energy by sample households (in percentage)

Forest division	Fuel wood	LPG
Kachugaon FD	199 (98.00)	4 (1.97)
Parbathjora FD	65 (97.00)	2 (3.07)
Haltugaon FD	93 (98.00)	2 (2.10)
Total	357 (97.80)	8 (2.19)

Source: Compile from primary data

Note: The figure in the brackets represents the percentage of the concerned figure.

5.12 Livestock Population

In Kokrajhar district, Cattle, Buffaloes, Sheep, Goats and Pigs are the main animals for most of the household (Census, 2011). Cattle rearing are widely practised by the rural household of the forest dwellers of Kokrajhar district. The total number of cattle reared in sample household of three forest divisions of Kokrajhar district is 2486, of which 915 are in the Kachugaon forest division, 362 numbers of cattle are in Parbathjora forest division, and 1209 cattle's are in the

Haltugaon forest division (table 5.10). The household of the sample villages also rears the Goat, Ship and Pigs. But it does not affect so much to the forest.

Therefore, it is clear from Table no.5.11, that the sample household of both Haltugaon and Kachugaon forest division has the maximum numbers of cattle that are reared. This indicates that grazing dependence on the forest is more in both Haltugaon and Kachugaon forest divisions as compared to the Parbathjora forest division. But it does not mean that the dweller of forest village of Parbthjora forest division does not use grazing in the forest.

Table No.5.11

Number of livestock of the sample households (in absolute number)

Forest Division	Cattle	Buffaloes	Goat	Sheep	Pig
Kachugaon FD	915	31	327	2	249
Parbathjora FD	362	15	175	0	125
HaltugaonFD	1209	08	180	0	264
Total	2486	54	682	2	264

Source: Compile from primary data

5.13 Result from Regression

As mention in Chapter 3, to explain the benefit obtained from the forest products by the different households and its relationship with various socio-economic and demographic variables viz. caste, sex, age, family size, occupation, landholding and educational qualification of the head of the family, regression analysis was used to check the association with forest income.

Table No.5.12

Regression result

Dependent Variable: Total Forest Income

Independent Variables/ Coefficient/Others	Estimated Coefficient (Robust Standard error)	P-value
In Family size	.086**	.044
	(.043)	
In Age	--.132	.116
	(.084)	
In Land holding	.036	.216
	(.029)	
In distance of village from forest	--.086 ***	.000
	(.023)	
House type	.061	.330
	(.062)	
Occupation	--.033	.180
	(.024)	
Caste	.083**	.034
	(.039)	
Sex	--.090	.368
	(.099)	
Literacy	--.020	.292
	(.019)	
_cons	8.942 ***	.000
	(.316)	
R^2	0.78	
F(9, 355)	2.87***	
	(.003)	

NB: ***means 1 % level of significance, ** means 5 % level of significance, * means 10 % level of significance.

From the regression result it is found that the family sizes have a significantly positive association with income from forest resources. Further, from the result it is observe that an addition of household family members leads to an increase in the families' forest income by 8 per cent. This means the extraction of forest resources increases as a result of the increase of households' family size. In case of the age of the household, though it is statistically not significant, it has a negative association with income from forest resources. As every percentage increase in the age of the family head of the household, there is 13 per cent decline in family income from forest resources. But it does not mean that they have abandoned the collection of forest products.

In case of the caste system, the forest villages have a significantly positive association with income from forest resources. The result revealed that an addition of one family member of Schedule tribe households increases the forest income by 8 per cent. This result is quite reasonable because in table no.5.5 shows that more than 68 per cent of Schedule tribe people of sample households compared to non-ST people are engaged in the collection of forest resources and so in their income.

From the above estimated result, it is observed that the distances from the nearest forest are significantly negative association with the forest income. It is also observed that the distance of villagers from the nearest forest adversely affect the income from forest resources as more distance required more time to collect the forest resources. But, it does not mean that the households do not earn income from forest resources.

The landholding and house types have a positive relationship with the income from forest resources. However, households use forest land for agriculture purposes due to lack of alternative opportunity in the locality and thus impact on forest. The types of house-building of the forest villagers also related to forest resources. From the result, it is observed that landholding and house types have no significant impact on forest income.

Again, sex, literacy and occupation are negatively related to the income from forest resources. The result indicates that there is no significant impact of sex

on the forest income or percentages of income earn from forest products. Though most of the family heads of the sample households are male, only a few are females. Thus, sex is negatively related to forest income. The result also shows that the households' literacy rate has no significant impact on the collection of natural resources. Because the majority of people are illiterate and even in literate people, most of them are only up to Lower Primary passed. In case of occupation, the majority of households depend on agriculture as their main occupation due to lack of alternative opportunities. So agriculture is the primary sources of income, and some percentage of income comes from forest resources. But the result shows that the impact of occupation on forest income is not significant.

Thus, the regression result revealed that the forest income of households of Kokrajhar district has significantly positive association with the growth of family members, caste system and negatively association with the distance from the nearest forest of the respondents. While land holding, house type and occupation have no significant impact on forest income.

Lastly, from the above table no.5.12 it is observed that the value of R^2 is not so high, but these are the best possible result observe. Here, 78 per cent of the variation in the dependent variable is explained by the model. The model is good in terms of the R square.

5.14 Conclusion

The conclusion can be drawn from the above results and discussion that the livelihood pattern of the people in general and the Scheduled Tribe population, particularly living in forest villages in and around forest areas, is highly shaped by the availability of forest resources. This also validated the hypothesis of high dependence on forest resources by the dwellers of forest villages. But, excessive use of forest resources such as encroachment on the forest, illegal logging or clear-felling, poaching of wild animals, illegal grazing leads to degradation of

forest and forest soil, water resources, loss of wildlife and biological diversity and aggravation of local, regional and global warming and climate change.

Thus, preservation of forest resources is important not only for improving the socio-economic condition of people by imparting higher and technical education, suitable cultivation approaches and judicious land use pattern but also to preserve biological diversity. Finally, it helps to mitigate local, regional and global warming and climate change.