

### 3.9. Socio-Economic and Demographic Aspects

#### 3.9.1 Reference Area

The reference area of this study is the area in the Jonai subdivision of Dhemaji District of Assam demarcated by the Oil India Limited for drilling of hydrocarbons. The subdivision constitutes the eastern most part of Assam on the north bank of the river Brahmaputra.

#### 3.9.2 Data Source and Methodology

The demographic profile of the study area has been constructed using village level data from 2001 Census of India for the Jonai circle, within which the reference area is broadly contained.

The socio-economic features of the population have been inferred from the primary data collected through a household sample survey conducted for the purpose. The sample has been selected through a two-stage sampling design. In the first stage nine villages have been purposively selected and in the second stage 10% of households from each of these villages have been selected at random as the ultimate sampling units. Although the Oil India Limited has selected three locations namely MSB, MSC and MSD for drillings in Jonai, currently the activity is going on in MSC and MSD. Accordingly the nine villages selected for survey are taken from the human habitations in the vicinity of MSC and MSD. These villages are No.1 Sikari Gaon, No.1 Milanpur Gaon, Gali Borbali Gaon, Galimechaki Gaon, Ujoni Bijoypur Gaon, Ratanpur Gaon, Lachit Nagar, Udaypur and Kuli Gaon. Total number of households thus surveyed is 115. For collecting information from the households, a structured questionnaire was used.

Data thus collected have been processed and analyzed using Microsoft Excel and SPSS 11.0. This involved classification and tabulation of the data and analysis of the same using tools such as average, ratio and percentage

#### 3.9.3 Structure of the Report

The report is comprised of five broad sections. This introduction is followed by presentation of the demographic profile of the study area as revealed by 2001 census data. The third section gives an outline of the land use pattern and the nature of agricultural practices in the area. The fourth section based on the household survey inputs presents a detailed account of

the demographic and socio-economic conditions in the reference area. The concluding section is a brief summarization of the important findings of the study.

### 3.9.4 Demographic profile of the study area as per census report

#### Population and Sex Ratio

In 2001, the Jonai circle was inhabited by about 23,000 households constituting a population of 1.43 lakh. The sex ratio of 932 females per 1000 males is just equal to the ratio for the entire state of Assam.

#### Literacy

The overall literacy rate for the population in the age group above 6 was 57.41 percent. Gender disparity in literacy rate is considerable. The female literacy rate was only 45.79% as against the male rate of 68.13%

#### Work Force Participation and Occupational Pattern:

Including marginal workers, the work force participation rate comes to 44.74 percent which imply a dependency ratio of 55.26 percent. The participation rate is somewhat higher for males than for females. Moreover the proportion of marginal workers is strikingly high in the female work force. High incidence of marginal workers implies prevalence of extensive underemployment in the female work force.

**Table 3.40. Work Force Participation Rate in Jonai Sub-division**

Percentage in Population	Male	Female	Overall
Main Workers	38.82	16.68	28.14
Marginal Workers	10.31	23.35	16.60
Main and Marginal Workers Combine	49.13	40.03	44.74

Source: Census of India 2001

The occupational distribution of work force, as presented in Table 3.41, indicates overwhelming dominance of the agricultural sector as the employer. Cultivators and agricultural labourers together account for about 79.74% percent of the main workers, while household industries etc. category accounts for less than 2% of the same. The smaller percentage of agricultural labourers along with a high percentage of cultivators signifies that

incidence of landlessness is not extensive. For the female workers, the percentage engaged as cultivators, household industries etc. workers are significantly higher than the same for male workers. In the others category, which includes services, the percentage for males is substantially higher than for females.

**Table 3.41. Occupational Distribution of the Main Workers in Jonai**

Category	Male	Female	Overall
Cultivators	74.84	84.73	77.67
Agricultural Labourers	2.62	1.36	2.07
Household Industries, etc.	1.18	3.08	1.74
Others	20.66	8.93	17.32
Total	100.00	100.00	100.00

Source: Census of India 2001

#### Land use pattern and nature of agricultural practices

The land use data are not available specifically for the reference area. The relevant data are available as district level aggregates. Hence the outline drawn in this section relates to the entire district of Dhemaji and not specifically to the reference area. Alongside the district level figures, the state level position has also been provided to facilitate easy comparison.

**Table 3.42. Comparative Land Use Patterns in Dhemaji and Assam**

S/N	Land/Land Use	Dhemaji District	Assam
1	Total Geographical Area (In Hectares)	323700	7843800
2	Percentage of Area under Forest	19.67	24.64
3	Percentage of Area not Available for Cultivation	40.86	32.28
3.1	Percentage of Land put to Non-agricultural uses	25.54	13.77
3.2	Percentage of Barren & Uncultivable Land	15.32	18.51
4	Percentage of Other Uncultivated Land	20.01	7.78
5	Net Area Sown as % of Total Area	19.48	35.37

Source: Statistical Hand Book, Assam, 2006

The percentages of area under forests and area currently under agricultural use are both lower in the district than in case of the entire state of Assam.

For an idea about the nature of agricultural operations in the study area some indicators have been put together in Table 3.43. The all Assam figures are given alongside to facilitate comparison. Rice account for nearly 73.6% of area under crops. Moreover, more than four-fifth of the entire rice is cultivated in winter season and about 15% of rice is cultivated in the autumn season. Only about 3.58% of rice is cultivated in summer seasons.

The cropping pattern reveals more diversity in terms of area under non-rice crops. Notable among these are Rape and Mustard, Potato and Rabi Pulses commanding 14%, 6% and 2% of total cropped area respectively.

Another striking feature is the much higher cropping intensity in the area. As high flood – proneness makes the output of the kharif crop uncertain, farmers here apparently cultivate the land in the Rabi season more extensively than in the rest of the state. However the cultivation of summer rice has not picked up as much in this area as at the all Assam level. Inadequate irrigation facility appears to be the obvious explanation for it.

**Table 3.43. Some Indicators of Level of Agricultural Practices in Jonai sub-division vis-à-vis the entire State of Assam for the Year 2005-06**

S/N	Indicators	Jonai	Assam
1	Percentage of Rice area in Total Cropped Area	73.60	77.90
2	Percentage of Autumn Rice in Total Area under Rice	15.08	16.46
3	Percentage of Winter Rice in Total Area under Rice	81.34	70.54
4	Percentage of Summer Rice in Total Area under Rice	3.58	13.0
5	Yield of Rice in Kg per Hectare	1283	1468
6	Percentage of Rice Area under High Yielding Varieties	29.51*	55.94
7	Fertiliser Use in Kharif Season (N+P+K Kg per Hectare)	1.0*	33.2
8	Fertiliser Use in Rabi Season (N+P+K Kg per Hectare)	2.05*	96.4
9	Cropping intensity#	162	144

# It is a measure of extent of multiple cropping. The value increases from 100 with the extent of multiple cropping. \*Relates to Dhemaji District. Source: Directorate of Agriculture, Government of Assam and for row 7 Statistical Hand Book, Assam, 2006

On the whole agriculture in the area is in a backward state compared to even the modest all-Assam standards. Adoption of HYV seeds and application of fertilizer are at much lower levels than the state averages. It is therefore hardly surprising that yield rates are poorer in the area.

### 3.9.5 Findings of the field investigation

#### Social Composition of the Sample

The caste composition of the sample households is given in Table 3.44. The sample is dominated by households belonging to Scheduled Tribes Categories. All such households belong to the Mising tribe. The other categories such as OBC/MOBC, General and Scheduled Caste account for 7.8%, 1.7% and 0.9% respectively. All the sample households are Hindu by religion.

**Table 3.44. Percentage Distribution of Sample Households by Castes Groups**

Caste Group	Percentage of Households
ST	89.6
OBC/MOBC	7.8
General	1.7
SC	0.9
Total	100.0

#### Demographic Profile as Revealed by the Sample Survey

##### Sex Ratio

The sex ratio in the sample has been found to be 1003 females per thousand males. The ratio is better than what was recorded in the 2001 Census for the Jonai circle.

##### Family Size and Average Age:

The family size of the sample households ranges from 1 to 15 with mean size of 5.76 and Standard deviation of 2.397. The average age of the population comprised of the sample households is 29.24 years.

### Land Ownership

There is considerable disparity in land ownership among sample households. Total land ownership (including homestead, agricultural land and other land) of these households ranges from 0.067 hectares to 14.59 hectares. The average ownership of land of the household works out to be 2.71 hectares with a standard deviation of 2.2087.

### Enrolment Ratio

In the age group 5 to 20 years, 94.36 percent have been found to be enrolled in educational institutions. The enrolment ratio is almost same for both the girls and boys. The usual gender disparity in enrolment has not been found in the reference area. Table 3.45 reveals more interesting features of the gender variation in the enrolment pattern. At the primary and secondary levels girls have a marginally higher enrolment ratio than the boys whereas in the tertiary level the picture is just the opposite. It implies that more boys continue their studies after the secondary level than girls.

**Table 3.45. Enrolment in the Age Group 5-20**

Category	Percentage enrolled
Male	94.25
Female	94.44
Overall	94.36

**Table 3.46. Level wise Break up of Enrolment Status in the Age Group 5 – 20**

Levels	Boys	Girls
Not Enrolled	5.75	5.56
Enrolled at the Primary Stage	36.78	37.96
Enrolled at the Secondary Stage	42.53	43.52
Enrolled in the Tertiary Stage	14.94	12.96
Total	100	100

### Work Force Participation and Occupational Pattern

On the whole, 76.74 percent in the age group 15-60 are in the work force. Gender disparity is not extensive in the overall participation rate. But the details given in Table 3.47 show significant gender difference in the occupational pattern. While overwhelming majority of the working women are engaged in unorganized sectors, the percentage engaged in organized sector is much higher among men workers.

**Table 3.47. Work Force Participation Rate for the Age Group 15-60**

Category	Working	Non-working
Male	79.83	20.17
Female	73.57	26.43
Overall	76.74	23.26

**Table 3.48. Work-wise Work force participation in the age group 15 – 60**

Category	Male	Female
Farming	65.05	93.39
Petty trader	8.61	1.20
Wage labour	1.62	0
Self employed (unorganized)	8.07	0
Business/trade (organized)	4.84	0.60
Government employee	10.75	4.78
Private employee	1.08	0
Total	100	100.00

### Living Conditions and Livelihood Pattern

#### Ownership and Type of Dwellings

All of the sample households reside in their own houses. About, two-thirds of households live in Kuccha houses. Another 23.5% of households live in semi-pucca houses. The remaining 9.6% lives in pucca houses. Only about 20% percent of the dwellings are electrified.

**Table 3.49. Percentage Distribution of Sample Households by Type of Dwelling**

Type of Dwelling	Percentage of households
Kuccha	67.0
Semi-Pucca	23.5
Pucca	9.6
Total	100.0

### Water Source

The sample households are not supplied water through piped connection. However the water they use is not necessary unsafe. About 97.4 percent of households access ground water using tube well. Though iron content of the water is high there are no reports of arsenic contamination or excessive fluoride content of the ground water reserves in the area as in some other parts of the state.

**Table 3.50. Percentage Distribution of Sample Households by Drinking Water Source**

Source	Percentage of Households
Tube wells	97.4
Both Wells and Tube wells	2.6
Total	100.0

For other purposes also the households more or less draw water from the same sources.

**Table 3.51. Percentage Distribution of Sample Households by Source of Water for Purposes Other than Drinking**

Source	Percentage of Households
Tube wells	97.4
Both Wells and Tube wells	2.6
Total	100.0

### Sanitation

Only about 32.2% of households have sanitary toilets. Nearly 61.7% of households still have only kuccha toilets and the remaining 6.1% in fact defecate in the open.

**Table 3.52. Percentage Distribution of Sample Households by Place of Defecation**

Place of Defecation	Percentage of Households
Sanitary toilets	32.2
Kuccha toilets	61.7
Open Defecation	6.1
Total	100.0

### Household Energy Sources:

About 65% of the sample households have been using only firewood for cooking. The remaining 35.7% of households use a combination of gas and firewood for cooking.

**Table 3.53. Energy Source for Cooking**

Energy Source	Percentage of Households
Firewood	64.3
Gas & Firewood	35.7
Total	100.0

**Table 3.54. Energy Source for Lighting**

Energy Source	Percentage of Households
Electricity & Kerosene	20.0
Kerosene	76.5
Kerosene & Solar energy	3.5
Total	100.0

Since only one-fifth of the houses are electrified, it is not surprising that only 20% the sample household use electricity for lighting. While more than 76% of the sample households use only kerosene for lighting, about 3.5% use a combination of kerosene and Solar energy for lighting.

### Livelihood Pattern

The livelihood pattern of sample households is presented in table 4.12.

**Table 3.55. Distribution of Sample Households by Principal Source of Livelihood**

Source of Livelihood	Percentage of Households
Farming	80.9
Government/Semi Govt. Service	13.0
Non-Government Service	0.9
Trading/Business (Organized)	3.5
Trading/Business (Unorganized)	0.9
Wage Labour	0.9
Total	100.0

Farming is the single most important source of livelihood for the households covered in the sample. More than 80% of the sample households depend on farming for their livelihood. For 14% of the households, salaried job in government, semi-government or non-government establishments is the principal source of livelihood. Another 4.4% make their living from trade and business activities (both organized and unorganized). 0.9% of households depend on wage labour for living.

### Agricultural Practices

Sample households have an average agricultural holding size of 2.02 hectares which is higher than average holding size in the state as a whole. However land productivity is much below what is recorded for the state. The average yield of rice, given in Table 3.56, compares poorly even to the modest all Assam standards of just over 1400 kgs per hectare. None in the sample cultivate high yielding varieties. Use of fertilisers is virtually absent in the kharif season though about 8% of farmers apply fertilisers in their rabi crops. While flood-proneness may discourage the use of productivity raising practices in the kharif season, inadequacy of irrigation does not allow much scope for their use in the rabi season.

**Table 3.56. Yield of rice (kg. per hectare)**

Types of Rice	Average	Minimum	Maximum	Standard Deviation
Winter Rice	892.8	576	1344	484.8
Other Rice	484.8	540	1080	256.5

### Consumption Standard

For inferring the consumption standard of the sample households, their possessions of various consumer durables were recorded in the survey. First, considering the possession transportation related durables, it is to be noted that 13.9% of the households do not possess any and another 64.3% possess only bicycles. Though remaining 21.8% possess motorized vehicles of one form or the other, the percentage of households having car is only 5.2%.

**Table 3.57. Percentage of Sample Households Possessing Transportation Related Consumer Durables**

Vehicle Type	Percentage of Household Owning
None	13.9
Only Bicycle	64.3
Only Motorcycle/Scooter	2.6
Motorcycle/Scooter and Bicycle	13.9
Car and Bicycle	0.9
Car, Motorcycle/Scooter and Bicycle	4.3
Total	100.0

In the other group of consumer durables consisting of radio, television and refrigerator, 48.7% of the households do not possess any of these three and another 27.8% possess only radio. 2.6% possess only television and 18.3% possess both radio and television. About 1.7% possesses television and refrigerator. Only 0.9% possesses all the three items.

**Table 3.58. Percentage of Sample Households Possessing other Consumer Durables**

Consumer Durable Item	Percentage of Household
None	48.7
Only Radio	27.8
Only Television	2.6
Radio & Television	18.3
Television & Refrigerator	1.7
All three	0.9
Total	100.0

About 80% of the sample households do not subscribe any newspaper. The rest 19.1% subscribe only vernacular newspapers

**Table 3.59. Percentage of Sample Households Subscribing Newspaper**

Type of Newspaper Subscribed	Percentage of Household
Vernacular daily	19.1
None	80.9
Total	100.0

### Health Status and Access to Health Facilities

#### Average Number of Sick Days

In the population comprised of the sample household members, the average number of sick days in the year preceding the survey has been found to be 17.77.

#### Incidence of Chronic Disease and Respiratory Problems

On the whole, 7.17% of the population consisting of sample household members reported to have some chronic disease. The percentage affected by chronic disease is higher for females than for that of males.

On the whole, 1.85% of population covered in the sample survey reported having respiratory problems. The rate is slightly higher among females than males.

**Table 3.60. Percentage of Population Affected by Chronic Diseases and Respiratory Problems**

Category	Affected by Chronic Disease	Affected by Respiratory Problem
Male	6	1.23
Female	8.4	2.46
Overall	7.17	1.85

**Distance from Primary Health Care Facility**

The sample villages are fairly well placed in case of access to public health care facilities. While in four of the nine villages the health centers are located in the village itself, for another three villages it is only at a distance of one kilometer. For all but two villages, the health centre is within a distance of two kilometers.

**Source of Health Care Advice**

Almost all the households get health advice from qualified professionals. In fact all the households have access to a government doctor for seeking health advice.

**Table 3.61. Percentage of Sample Households Accessing Health Advice from Different Sources**

Source	Percentage
Government Doctor	94.03
Both Govt. Doctor & Private Doctor	4.44
Both Govt. Doctor & Alternative Practitioner	1.38
Both Govt. Doctor & Quack	0.15
Total	100.00

### 3.9.6 CONCLUSION

The area is inhabited predominantly by tribal population. The area on the whole has less forest cover than the state as a whole. At the same time land currently under agricultural use also commands a smaller percentage of total land area than in the state as a whole. The land use pattern data reveal that a substantially large part of land is not used for agriculture.

From the finding of the study such as two thirds of households live in kuccha houses, only one fifth of the houses are electrified, use of sanitary toilet is limited to less than on third of the households etc., it is amply clear that the average standard of living of the population in the reference area is quite ordinary. Their poor possession of consumer durables further corroborates this conclusion.

Agriculture is the prime occupation and source of livelihood. That most of the people engaged in agriculture are cultivators and only a small percentage is agricultural labourers imply that most household possess land holdings of some reasonable size. Landlessness is limited to a small percentage of households. However, agricultural productivity is low and adoption of productivity increasing practices is far less in the area than in other parts of the state.

On the positive side, the sex ratio is fairly good, women's work force participation rate is quite high though somewhat less than that of men's, enrolment ratio is high and there is no significant gender disparity in enrolment. On the health front also the situation is fairly satisfactory. Public health centers are within easy reach of the people in all the sample villages. People needing health advice get it from government doctors. Average number of sick days for the population comprised of sample household members is not high and percentages of that population afflicted with chronic disease and respiratory problems are also much lower than what has been found in similar surveys conducted elsewhere in the state and the region.