

For Official use only

REPORT
ON
CONSUMPTION OF WOOD AND
BAMBOO IN THE
CENTRAL ALLUVIAL PLAINS OF
WEST BENGAL



FOREST SURVEY OF INDIA
EASTERN ZONE
CALCUTTA
1998



REPORT

ON

**CONSUMPTION OF WOOD AND
BAMBOO IN THE
CENTRAL ALLUVIAL PLAINS OF
WEST BENGAL**

**FOREST SURVEY OF INDIA
EASTERN ZONE
CALCUTTA
1998**

PREFACE

Studies on consumption of wood and bamboo in Central alluvial plains of West Bengal (covering the districts of Murshidabad, Nadia, 24 Parganas, Howrah and Hooghly) were undertaken by Forest Survey Of India, Eastern Zone, Calcutta, during the period of November, 1991 to March, 1993 along with the inventory of forest resources in these areas. The main objective of the study is to find out the consumption pattern and quantum of wood and bamboo consumed annually in the project area mainly in respect of households.

The present annual consumption of wood for house construction, furniture, agricultural implements and fuelwood are estimated at 4.15 lakh m³, 2.87 lakh m³, 1.73 lakh m³ and 40.6 lakh m³ respectively for the entire project area (five districts). Similarly, the number of bamboos consumed annually for house construction, furniture and agricultural implements are estimated at 437.47 lakhs, 1.43 lakhs and 107.05 lakhs respectively for the project area. Attempt was also made to assess the consumption of leaves, wood waste, agricultural waste, kerosene oil, electricity, L.P.G. etc. as these alternative resources have direct impact on the consumption pattern of wood and bamboo.

The staff of Eastern Zone, who were entrusted with carrying out the study and bringing out the report in this form, deserve much appreciation. The cooperation/help extended by West Bengal Forest Department is thankfully acknowledged.

It is hoped that the report will prove useful by way of providing important inputs for the forest resource management and development planning of the region.

Dr. Devendra Pandey
Director.
Forest Survey Of India.

CONTENTS

	<u>PARA NO.</u>	<u>PAGE NO.</u>
<u>CHAPTER : I</u>		
<u>GENERAL INFORMATION</u>		
Introduction	1.1	1
Objectives	1.2	1
A brief profile of the project area	1.3	1
Map sheets	1.4	2
<u>CHAPTER : II</u>		
<u>METHODOLOGY :</u>		
Sampling design	2.0	4
Basic sampling frame	2.1	4
Field data collection	2.2	4
Sampling intensity	2.3	5
<u>CHAPTER : III</u>		
<u>DATA PROCESSING AND RESULTS</u>		
General	3.0	6
Estimation of present use of wood in the households	3.1	6
Results and analysis	3.2	8
Consumption of wood and bamboo for house construction	3.2.1.	8
Consumption of wood and bamboo for furniture	3.2.2	9
Consumption of wood and bamboo for agricultural implements	3.2.3	10
Wood requirement of firewood consumption	3.2.4	11
Consumption of Kerosene oil,Electricity,L.P.G.,Coal, agricultural wastes, wood waste and leaves	3.2.5	12
<u>BIBLIOGRAPHY</u>	-	15
<u>APPENDIX : I : DISTRICT WISE TOPOSHEET NUMBER</u>		16
<u>APPENDIX :II : LIST OF TOWNS/VILLAGES SURVEYED IN DIFFERENT DISTRICTS DURING THE SURVEY.</u>		17
<u>APPENDIX:III : QUESTIONNAIRE</u>		19

CHAPTER: I

GENERAL INFORMATION

1.1. Introduction :

A study on the consumption of wood and bamboo in the districts of 24 Parganas (North), 24 Parganas (South), Murshidabad, Nadia, Hooghly and Howrah of West Bengal was carried out during the years 1991-92 and 1992-93 along with the inventory of forest resources by Forest Survey of India, Eastern Zone, Calcutta.

1.2 Objectives :

The study is aimed at knowing the consumption pattern and quantum of wood and bamboo consumed annually in the project area primarily in respect of households. Such informations are useful in analysing the pattern, trend and level of consumption in the area.

1.3 A brief profile of the project area :

The following informations give an idea of location, geographical area, extent of forest area and forest cover of the project area :

Project area (name of the districts)	Location	Geographical area(in km ²)	Recorded forest land (in km ²)	Percentage of recorded forest land	Vegetation cover as per remote sensing data (in km ²)	Percentage of vegeta- tion cover
Murshidabad	23°45' - 24°50' N latitudes 87°51' - 88°45' E longitudes	5,324	8	0.15	8	0.15
Nadia	22°54' - 24°6' N latitudes 88°6' - 89° longitudes	3,927	13	0.33	13	0.33
24 Parganas (South)	21°30' - 23°15' N latitudes	10,159	4,263	41.96	5,205.7	51.24
24 Prgs.(North)	88°3' - 89°7' E longitudes	3977	-	-	-	-
Howrah	22°10' - 22°45' N latitudes 87°50' - 88°24' longitudes	1,467	-	0.00	0.00	0.00
Hooghly	22°39' - 23°12' N latitudes 87°30' - 88°30' E longitudes	3,149	3	0.10	3.00	0.10

Source : Forest Deptt. West Bengal and R.R.S.S.C., Kharagpur
(based on IRS-1A data of 1988)

86°0' 87°0' 88°0' 89°0' 90°0'

MAP OF WEST BENGAL SHOWING AREA SURVEYED FOR WOOD CONSUMPTION

Kms. 100 50 0 100 200 300 Kms.

27°
0'

27°
0'

26°
0'

26°
0'

25°
0'

25°
0'

24°
0'

24°
0'

23°
0'

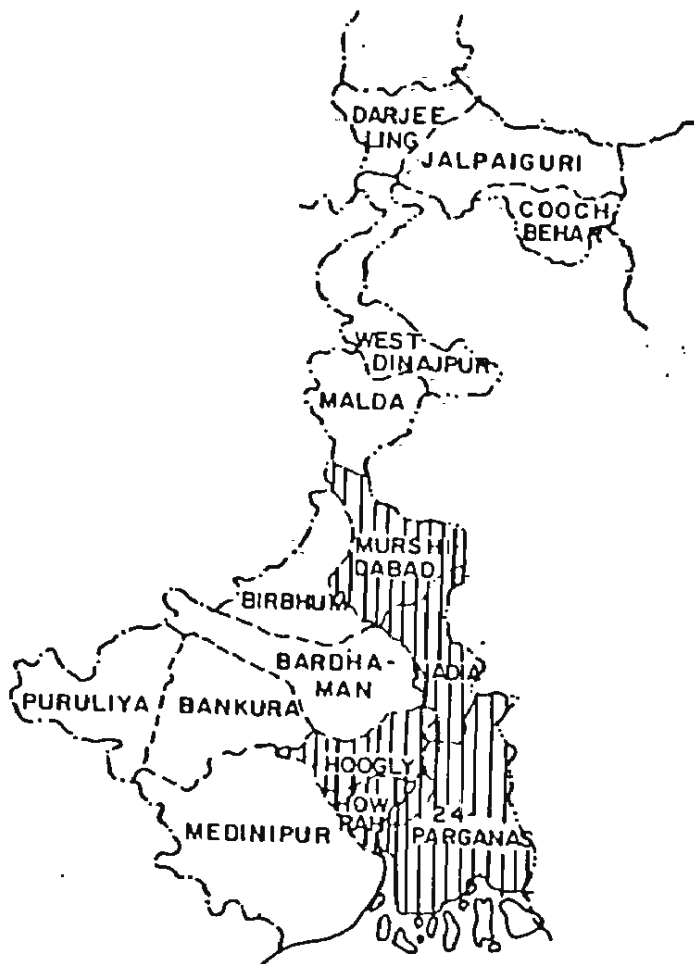
23°
0'

22°
0'

22°
0'

21°
0'

21°
0'



SURVEYED AREA



86°0'

87°0'

88°0'

89°0'

90°0'

The vegetation cover/forest area is very extensive and compact in 24 Parganas (South) district. Most of these forests have been recorded as Mangrove forests of coastal saline zone. All other districts have very little vegetation cover/forest area (negligible in comparison to 24 Prg.South).

The population, density of population and the literacy rate of the six districts(as per 1991 Census) are furnished hereunder :-

Districts	Total	Population(1991 Census)		Density of population	Literacy rate (in percentage)
		Rural	Urban		
Murshidabad	4740149	4245802	494347	889	38.28
Nadia	3852097	2980279	871818	980	52.53
24 Prgs.(North)	7281881	3551581	3730300	1778	66.81
(South)	5715030	4954653	760377	573	55.10
Howrah	3729644	1880530	1849114	2535	67.62
Hooghly	4355230	2996979	1358251	1382	66.78

Source :- Census of India, 1991, Final population totals, Paper I of 1992, Vol.II published by Directorate of Census operation, W.B.

The population has direct bearing on quantum of consumption of wood and bamboo.

In general, these districts enjoy a moderate climate divisible into a short, mild winter(Nov-Feb) followed by a hot humid Summer(March-May) and a protracted rainy season(June-Sept.)

The annual rainfall (in mm) recorded in these districts has been given hereunder :

Districts	Rainfall (in mm)			
	Normal	Actual		
		1990	1991	1992
Murshidabad	1338	1538	1429	1030
Nadia	1401	1685	1386	1071
24 Prgs.	1579	2208	1718	1493
Howrah	1676	1953	1651	1210
Hooghly	1516	1571	1845	1057

Source :- Directorate of Agriculture, W.B. and Economic review (1991-92), Govt. of West Bengal.

The temperatures recorded in these districts has been given below:-

I.

Districts	Station	1989		1990		1991	
		Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
Murshidabad	Berhampur	44	8	40	9	39	7
Nadia	Krishnanagar	43	8	36	8	33	7
Howrah							
Hooghly	Calcutta	42	8	37	9	39	10

II.

24 Prgs.	Sagar Islands	1986		1987		1988	
		Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
		34	14	33	15	30	17

Source : I. State Report on West Bengal Forests, 1993-94.
State Forest Deptt., West Bengal.

II. State Report on West Bengal Forests, 1990-91.
State Forest Deptt., West Bengal.

1.4 Map sheets :

The details of the toposheets covering the project area are given in Appendix-I (appended at the end of the report).

CHAPTER : II METHODOLOGY

2.0 Sampling design :

A. Rural sector : A two stage stratified sampling design has been adopted in the rural sector. The villages constituted the first stage sampling units. A sample of 0.25% villages were taken from each district for this purpose.

The households formed the second stage sampling unit. A sample of 10 households from each of the selected village were selected randomly so as to include different income groups.

B. Urban sector : A two stage sampling was adopted. In the first stage, a sample of 6 urban centres were selected. These are the district headquarters of the respective districts. In the second stage, 20 households representing all income groups from each urban centre were selected for enumeration.

2.1 Basic sampling frame :

From Census of India, 1981, a list of villages /towns of Murshidabad, Nadia, 24 Parganas(North), 24 Parganas(South), Hooghly and Howrah districts were prepared which constituted the basic sampling frame. Villages/towns were selected randomly with the help of random table. In the second stage of sampling, the randomly selected villages/towns were stratified into rural and urban areas.

The details of rural and urban centres and households selected for sampling have been given in the Appendix- II(added at the end of the report.)

2.2 Field data collection :

27 villages were selected for the wood consumption survey in the rural sector. Questionnaire used for collecting data during the survey is given in the manual(appendes as Appendix III) Same questionnaire was followed for data collection in urban sector also. The questionnaire was so designed that maximum possible information could be gathered by putting minimum number of questions to villagers. Selected villages for survey were first located in the mapsheets supplied by Survey Of India. Assistance was sometimes obtained from the local people and the local officers for locating the villages. 10 households were selected randomly in each village. The forms prescribed for this purpose were filled up by the investigators.

2.3 Sampling intensity :

District	Rural/Urban	Population 1991	No.of households sampled	Sample covering population	Intensity of sampling percentage
Murshidabad, Nadia,24 Prgs. (North & South)	Rural	20609824	270	1761	0.0085
Howrah Hooghly.	Urban	9064207	116	691	0.0076
Total:-		29674031	386	2452	0.0083

CHAPTER:III
DATA PROCESSING AND RESULTS

3.0 General :

The data collected in the prescribed field forms were processed to generate necessary information (such as present use, total consumption and per capita consumption of wood for house construction, furniture making, agricultural implements, fuelwood etc.) The information regarding consumption of bamboo was also generated. The consumption of wood and bamboo at the district level was also estimated.

3.1 Estimation of present use of wood in the households:

Per capita consumption of wood for various purposes for each of the sampled villages is derived by adding the wood used in the sampled houses divided by the total number of population in the sampled houses for each of the respective villages. Per capita consumption of wood for the district is calculated by taking arithmetic mean of villages. This figure, multiplied by total number of population of the district, gives the present use of wood for the district. Therefore, the various uses like house construction, furniture making, agricultural implements making, domestic consumption of fuelwood are also derived from that method. These are calculated both for rural and urban areas of the district. Thus, per capita consumption of wood for house construction can be formulated as follows:-

Present consumption of wood
for house construction for a
district in rural sector : $\frac{\sum X}{N} \times$ District population of the rural
sector.

Where $\sum X$ = Total existing usage of wood for selected houses in the
sampled villages.

N = Total number of persons in the selected houses in the
sampled villages.

Thus, per capita usage of wood for house construction was calculated by dividing total use of wood of sampled houses with total population in the sampled houses.

Similar method is followed to calculate the present usage of wood for house construction in urban areas and also for furniture making, agricultural implements and fuelwood.

Following assumptions were made while calculating annual consumption after local investigation :-

- i) The life of a house is assumed as 20 years and annual requirements of wood for house construction would be 5% of the wood which is in use now. It is assumed that repairs of wood for houses is generally carried out at an interval of 10 yrs. and the quantity of timber required at the time of repair is about 10% of the wood required for new construction.
- ii) Furniture items being kept indoor and less exposed to weathering, the average life is taken as 25 years and the annual requirement of furniture wood will be 1/25th of the wood presently in use.
- iii) Agricultural implements are replaced every year.
- iv) Firewood collected is consumed during the year.
- v) Kerosene oil is consumed every year.

Calculation of annual consumption of wood for house construction could thus be arrived at by the following method :

$$\text{Annual wood consumption per capita} = \frac{\sum X}{N \times 20}$$

Where X = Total wood consumption in all the selected households of all the sampled villages in rural sector.

N = Total number of persons in the selected houses in the sampled villages.

Similar procedure as explained above is adopted for calculating the annual consumption of wood for furniture, agricultural implements, fuelwood, kerosene oil etc.

3.2 Results and analysis :

Consumption of wood in four broad categories are mainly considered for analysis :-

- i) House construction
- ii) Furniture
- iii) Agricultural implements
- iv) Firewood.

Similarly, the bamboo is also used for various purposes i.e. house construction, furniture making, agricultural implements, basket matting, bullock cart and for fencing courtyard /gardens/cattle sheds etc. However, most of the consumption is confined to house construction. Consumption of bamboo in house construction agricultural implements and furniture making only have been considered for analysis. Other items have very little impact in terms of consumption in the project area.

3.2.1 Consumption of wood and bamboo for house construction :

Most of the houses in rural areas are kutchha or semi-kutchha with muds and bamboos and straw roof or tiles/tins. Mostly bamboos are used for making roofs and walls. Wooden beams are used for supporting the roofs and bamboo frames of the house. Wood is mainly used for making doors and windows. The quantity of wood used for making wooden panels is quite large. The per capita and total annual wood consumption for house construction for rural and urban sector in the districts of Murshidabad, Nadia, 24 Parganas(South)24 Parganas(North), Howrah and Hooghly are summarised below :

Districts	Rural (in m3)		Urban (in m3)	
	Per capita	Total	Per capita	Total
1. Murshidabad	0.00532	22608.88	0.00685	3386.27
2. Nadia	0.0152	45300.23	0.0115	10025.90
3. 24 Prgs(S)	0.04665	231208.86	0.0031	2357.16
4. 24 Prgs(N)	0.00491	17438.24	0.0081	30215.43
5. Howrah	0.00465	8744.46	0.00735	13590.98
6. Hooghly	0.00825	24725.06	0.0039	5297.17

The per capita annual consumption of wood in rural sector is lowest in Howrah district and highest in 24 Parganas(S) district. Similarly, the per capita annual consumption of wood in urban sector in respect of house construction is lowest in 24 Parganas(S) district and highest in Nadia district.

The per capita per annum and total annual consumption of bamboo for house construction is given hereunder :-

District	Rural		Urban	
	Per capita(nos.)	Total(Lakhs of nos)	Per capita (nos)	Total(lakhs of nos)
1. Murshidabad	1.53	64.82	0.69	3.43
2. Nadia	2.26	67.50	0.33	2.92
3. 24 P(S)	1.39	68.92	1.30	9.86
4. 24 P(N)	2.20	78.24	0.54	19.99
5. Howrah	2.23	42.06	1.02	18.80
6. Hooghly	1.80	53.92	0.52	7.01

3.2.2 Consumption of wood and bamboo for furniture :

The requirement of people in general for furniture is limited. The furniture items generally used are wooden cots, chairs, tables, chowkis, and wooden almirahs. The per capita and total annual consumption of wood in furniture items(both for rural and urban sectors for respective districts) are furnished hereunder :-

Districts	Rural(in m3)		Urban (in m3)	
	Per capita	Total	Per capita	Total
1. Murshidabad	0.00155	6580.90	0.00215	1062.84
2. Nadia	0.00755	22501.10	0.005	4359.09
3. 24 Prgs.(S)	0.04105	203388.50	0.00235	1786.88
4. 24 Prgs(N)	0.0022	7813.47	0.0019	7087.57
5. Howrah	0.0014	2632.74	0.00515	9522.93
6. Hooghly	0.0052	15584.29	0.0034	4618.05

The consumption of bamboo for furniture items, in terms of per capita as well as total, has been reflected in the table below :

Districts	Rural		Urban	
	Per capita(nos.)	Total(in lakhs of nos.)	Per capita(nos.)	Total (in lakhs of nos.)
1.Murshidabad	-	-	-	-
2. Nadia	0.00084	0.025	-	-
3. 24 Prgs.(S)	0.0006	0.297	-	-
4. 24 Prgs.(N)	0.031	1.108	-	-
5.Howrah	-	-	-	-
6.Hooghly	-	-	-	-

The use of bamboo in furniture making is very limited and in some of the districts, it is almost negligible.

3.2.3 Consumption of wood and bamboo for agricultural implements :

Items like plough pieces, yoke, tool handles, dhaw etc. are utilised in agricultural work. These implements are mostly used by rural population and their use in urban sector is very limited. The annual wood requirement for agricultural implements in the six districts, per capita and total, are given in the following table :-

Districts	Rural(in m3)		Urban(in m3)	
	Per capita	Total	Per capita	Total
Murshidabad	0.00618	26239.04	0.00034	168.06
Nadia	0.02074	61410.95	0.00347	3025.19
24 Prgs.(S)	0.00925	45830.51	0.0029	2205.08
24 Prgs(N)	0.001	3551.56	0.00002	74.60
Howrah	0.01351	25405.94	0.0003	554.72
Hooghly	0.0016	4795.15	-	-

The consumption of bamboo for agricultural implements is reflected in the table below, per capita as well as total :-

District	Rural		Urban	
	Per capita(no.)	Total(no.in lakhs)	Per capita(no)	Total(no.in lakhs)
Murshidabad	0.482	20.46	0.061	0.30
Nadia	0.684	20.38	0.037	0.32
24 Prgs.(S)	0.647	32.05	0.014	0.11
24 Prgs(N)	0.305	10.83	0.016	0.59
Howrah	0.885	16.64	0.211	3.90
Hooghly	0.492	1.47	-	-

3.2.4 Wood requirement for firewood consumption :

Firewood is consumed mainly in rural areas. The per capita and total annual consumption of firewood in the six districts are shown as under :

Districts	Rural		Urban	
	Per capita(in m3)	Total(*000m3)	Per capita(m3)	Total(*000m3)
Murshidabad	0.168	713.294	-	-
Nadia	0.286	852.359	-	-
24 P(S)	0.3145	1558.238	-	-
24P(N)	0.192	681.903	-	-
Howrah	0.132	248.229	0.0018	3.328
Hooghly	-	-	-	-

The use of firewood is very insignificant in the urban sector. The highest consumption of firewood is seen in 24 Parganas(South) where the distinct chunk of compact forest in Sunderban area is available.

3.2.5 Consumption of Kerosene oil, Electricity, L.P.G., Coal, agricultural wastes, wood waste and leaves :

Attempts were also made to assess the consumption of fuel/energy from other sources such as kerosene oil, electricity, L.P.G. ,coal, agricultural wastes, wood waste and leaves. The projection in terms of per capita and total annual consumption of these items have been presented hereunder :

Consumption of Kerosene oil :

Districts	Rural		Urban	
	Per capita(ltr.)	Total (in '000 ltr.)	Per capita(ltr.)	Total('000ltr.)
Murshidabad	9.84	41778.691	15.00	7415.205
Nadia	12.72	37909.148	19.56	17052.760
24 P(S)	46.32	229499.526	5.65	4296.130
24 P(N)	12.48	44323.730	10.44	38944.332
Howrah	14.28	26853.968	4.32	7988.172
Hooghly	17.28	51787.797	13.68	18580.873

Consumption of Electricity :

District	Rural		Urban	
	Per capita(unit)	Total('000units)	Per capita(unit)	Total('000units)
Murshidabad	10.44	44326.172	55.08	27228.632
Nadia	40.08	119449.582	125.88	109744.449
24 P(S)	5.56	27587.507	-	-
24 (N)	42.12	149592.591	92.64	345574.992
Howrah	N.A.	N.A.	169.08	312648.195
Hooghly	1.22	3656.314	51.96	70574.721

Consumption of L.P.G. :

District	Rural		Urban	
	Per capita(no)	Total('000 no)	Per capita(no.)	Total('000 no)
Murshidabad	0.06	254.748	0.84	415.251
Nadia	0.096	286.106	1.50	1307.727
24P(S)	-	-	0.252	191.614
24P(N)	0.252	894.998	3.240	12086.172
Howrah	-	-	1.32	2440.830
Hooghly	-	-	2.52	3422.792

Consumption of Coal :

	Rural		Urban	
	Per capita(kg)	Total(lakhs of kg)	Per capita(kg)	Total(lakhs of kg)
Murshidabad	31.44	1334.88	54.12	267.54
Nadia	90.36	269.29	95.40	831.71
24P(S)	46.92	2324.72	26.03	197.92
24 P(N)	104.76	3720.63	85.32	3182.69
Howrah	79.68	1498.40	89.88	1661.98
Hooghly	109.32	3276.29	90.96	1235.46

Consumption of agricultural wastes :

	Rural		Urban	
	Per capita(kg.)	Total(lakhs of kg.)	Per capita(kg)	Total(lakhs of kg.)
Murshidabad	124.80	5298.76	21.12	104.40
Nadia	26.76	797.52	2.72	23.74
24P(S)	45.48	2253.37	12.72	96.71
24P(N)	160.80	5710.94	-	-
Howrah	-----N.A.-----			
Hooghly	79.56	2384.39	-	-

Consumption of wood waste :

Districts	Rural		Urban	
	Per capita (m3)	Total('000 kg)	Per capita(m3)	Total('000 kg)
Murshidabad	0.0048	20.379	0.048	23.728
Nadia	0.024	71.526	0.0192	16.738
24 Prgs(S)	0.24	1189.116	0.0048	3.649
24 Prgs(N)	0.276	980.236	0.0408	152.196
Howrah	-----N.A.-----			
Hooghly	-----N.A.-----			

Consumption of leaves :

Districts	Rural		Urban	
	Per capita(kg)	Total(lakhs of kg)	Per capita(kg)	Total
Murshidabad	18.84	799.90	42.96	212.37
Nadia	10.296	306.84	-----N.A.-----	
24 Prgs.(S)	26.04	1290.19	-----N.A.-----	
24 Prgs.(N)	110.04	3908.15	-----N.A.-----	
Howrah	-----N.A.-----			
Hooghly	0.648	19.42	-	-

NB:- N.A. - Not Available.

BIBLIOGRAPHY

1. Economic Review- 1992-93, Statistical Appendix,
Govt.of West Bengal, Published by State Planning Board,Calcutta.
2. Final population totals, Series 1
Census of India 1991
Paper 1 of 1992, Vol. II By Registrar General and Census Commissioner.
Published by Controller of Publications., Govt. of India.
3. Introducing West Bengal,
Published by Information and Cultural Affairs Deptt.,
Govt.of West Bengal.
4. Published Reports of F.S.I.
5. State Report on West Bengal Forests, 1990-91 and 1993-94,
State Forest Deptt., West Bengal.
6. Forest cover mapping of W.B. State through digital image processing of
I.R.S.S. data - By Forest Deptt.,Govt.of West Bengal and R.R.S.S.C.,
Kharagpur, Govt.of India.

APPENDIX - IDISTRICT WISE TOPOSHEET NO. :

Murshidabad :	72 P/13,14,15,16, 78 D/2,3,4,7,8,11,12 73 M/13 79 A/1,2,5,9
Nadia :	78 D/12, 79 A/1,2,5,6,7,8,9,10,11,12,13,15, 79 B/5,9
24 Parganas :	79 A/12,16 · 79 B/3,4,5,6,7,8,9,10,11,12,13,14,15,16 79 C/1,2,5,6,9,10,13,14
Howrah :	73 N/13,14,15,16, 79 B/2,3,4,6,7
Hooghly :	73 N/9,10,13,14, 79 A/4,8, 79B/1,2,5,6.

APPENDIX - II**(a) List of towns surveyed in different districts during the survey.**

<u>District</u>	<u>Name of the town</u>	<u>No. of household surveyed</u>	<u>No. of persons in the surveyed houses.</u>
Murshidabad	Berhampur	20	113
Nadia	Krishnanagar	20	132
24 Prgs.(S)	Diamond Harbour	20	142
24 Prgs.(N)	Barasat	19	90
Howrah	Howrah town	20	127
Hooghly	Chuchura	16	87

(b) List of villages surveyed in different districts during the survey :

<u>District</u>	<u>Name of villages</u>	<u>No. of households surveyed</u>	<u>No. of persons in the houses sampled</u>
Murshidabad	Domkal	10	66
	Ramnagar	10	73
	Gazinipur	10	68
	Palsauda	10	76
	Bonjhatia	10	68
		50	351
Nadia	Ballaldihii	10	75
	Bahadurpur	10	47
	Jagpur	10	51
	Patuli	10	60
		40	233
24 Prgs(S)	Kamra	10	51
	Raypur	10	86
	Nurpur	10	59
	Phulbani bamania	10	66
	Kishorepur	10	57
	Magrahat	10	50
	Dhosa	10	53
	Shilepur	10	92
		80	514

District	Name of villages	No. of households surveyed	No. of persons in the house sampled
24 Prgs(N)	Amdanga	10	78
	Pinji	10	69
	Media	5	35
	Chotta jugulia	10	71
	Kirtipur	10	54
	Mana	10	62
	Kharo	10	53
		65	422
Howrah	Nalpur	10	94
Hooghly	Radhanagar	10	72
	Diara	5	26
	Belinuri	10	49
		25	147
Grand total :		270	1761

(c) Rural and urban population by district(1991 Census)

District	Population	
	Rural	Urban
Murshidabad	4245802	494347
Nadia	2980279	871818
24 Prgs.(S)	4954653	760377
24 Prgs.(N)	3551581	3730300
Howrah	1880530	1849114
Hooghly	2996979	1358251

ANNEXURE : III
CONSUMPTION STUDY

1. Name of the village/town/city _____

- (b) Proximity to forests (in km) _____
(write in two digit within the box provided) _____
2. Jurisdiction of
- (a) Civil administration
- (-i) Civil administration _____
- (ii) Sub - division _____
- (iii) Block _____
- (iv) Thana _____
- (v) Serial number of household _____
- (b)(i) Division _____
- (ii) Range _____
3. Information regarding building studied
- (a) Kachha/Semi-permanent/Pacca _____
Put do code(Ref: instruction for consumption studies) _____
- (b) No.of persons in the household _____

- (c)(i) Average annual income of each family _____
(in Rs.....)
- (ii) Occupation
- Govt. Service _____
- Private _____
- Agriculture _____
- Business _____
- Others _____
- (d) Plinth area(in sq.mt.)of building _____

- (ii) Number of rooms like living _____
- | | | |
|-------------|---------------------|--------|
| Storage | Common bath/ toilet | Others |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| Living | Storage | |
| _____ | _____ | |
| _____ | _____ | |
| Bath/Toilet | Others | |

Timber(m3)/Bamboo(no.)/Poles(no.) used in building
In case of timber the 4th box will be used for decimal
figure only.

	<u>Timber(in m3)</u>	<u>Bamboo(no.)</u>
a) Door/Windows	-----	-----
	-----	-----
b) Roof structure	-----	-----
	-----	-----
c) Furniture and Fixture	-----	-----
	-----	-----
d) Walls	-----	-----
	-----	-----
e) Fencing	-----	-----
	-----	-----
f) Poles	-----	-----
	-----	-----

5. **Source of supply and preference of type** -----

6. **Price of timber paid at the time of construction(show separately in each category).**

<u>Timber</u>	<u>Bamboo</u>
-----	-----
-----	-----

7. **Requirement of timber for maintenance of building and price thereof Price Rs.** -----

8. (a) **Nature of furniture and fixture found in use** -----

(b) **Frequency of repair.** -----

9. Agricultural equipments and tools in use and their renewal cycle or annual requirement rate(to be furnished in two decimal for timber)

	<u>Timber</u>	<u>Bamboo(no)</u>
(a) Plough	-----	-----
(b) Yoke	-----	-----
(c) Baskets	-----	-----
(d) Tools handles	-----	-----
(e) Bullock carts	-----	-----
(f) Others	-----	-----

10. Source of supply of timber for agricultural equipments.-----

11. Requirement of fuel/monthly.

- | | |
|--|--|
| <p>(a) Firewood (in m3)including source of supply(i.e. from Govt.forests or private land trees)and price</p> | <p>Data to be furnished in two decimal. 4th and 5th box is exclusively for decimal figure for <u>item(a)& (b)& (c)</u></p> |
|--|--|

N.B. For data processing

(b) Wood waste(m3)	-----
(c) Charcole(in m3)	-----
(d) Kerosene(in ltr.)	-----
(e) Cowdung(in kg)(in Rs.....)	-----
(f) Electricity(in KWH)	-----
(g) Coal(in kg)	-----
(h) L.P.G.(in no.of cylinder)	-----

12. Consumption of other produce/month.

- (a) Thatch(in kg.) -----

- (b) Leaves(kg) -----

- (c) Fodder (in kg.) -----

- (d) Oil seeds (in kg.) -----

- (e) Flowers(in kg.) -----

- (f) Grasses (in kg.) -----

- (g) Others(in kg.) -----

Date.....

Signature of the Crew Leader

Designation-----