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NSS 295

National Sample Survey
 Errata List for Draft Report No. 295

Sl. No.	reference	correction
(1)	(2)	(3)
1.	Page 5, para 4.1 table (3), heading for cols. (4) to (7)	Replace the words 'in agricultural occupation engaged as' after percentage (0.00) of households by 'engaged in selected agricultural occupation'
2.	Page 6, para 4.2 last line.	Replace the entry '26.61' by '22.06' for.
3.	Page 6, para 5.1 4th line	Replace the work 'particular' by 'cropping'.
4.	Page 9, para 7.1, table (7), heading for col. (3)	Insert 'month' between the words 'per' and 'consumption'.

NATIONAL SAMPLE SURVEY
THIRTYFIRST ROUND : JULY 1976-JUNE 1977

A NOTE ON JHUM CULTIVATION IN NORTH EASTERN STATES

INTRODUCTION

1.1 During the 31st round of NSS (July 1976 - June 1977) a detailed survey to study the different aspects of shifting cultivation known as Jhum cultivation in the North Eastern region was undertaken. Information was collected at village level from the village headman or from a knowledgeable person of the village and at household level either from the head of the household or from a member of the household on a sample basis through trained investigators by method of personal interview. The rural sector of the states of Arunachal Pradesh, two hill districts of Assam (Karbi Anglong and Jorhat), five hill districts of Manipur (East, West, North, South and Tengnoupal), Meghalaya and Tripura were covered in the survey. The detailed results of the survey under the title 'Jhum cultivation in North Eastern States' were published in the April 1979 issue of Sarvekshana (Vol II, No.4).

1.2 Jhum cultivation is mostly done by the tribal people in the hill areas of the North Eastern States. The information on Jhum cultivating villages and households were collected in three different schedules of enquiry viz. the household listing schedule, the village schedule on Jhum cultivation and the household schedule on Jhum cultivation.

1.3 Some of the salient features of the Jhum cultivating villages and households derived from the survey results have been presented in this note. All estimates given in the succeeding paragraphs relate to the central and state sample pooled figures of Arunachal Pradesh, and central sample figures only for other states.

1.4 In most of the North Eastern States there is no regular land record system. The lands are not cadastrally surveyed and so the informants have no definite idea about the measurement of land under cultivation. The method of eye estimation is generally used to estimate the area under cultivation in these States.

CHAPTER III. INFORMATION AND JHUM CULTIVATION

2.1 An overwhelming majority of the households in this region are engaged in agricultural activities. Table (1) based on information collected in household listing schedule presents the percentage of households engaged in cultivation and percentage of those cultivator households engaged in Jhum cultivation by household group/major tribe. Households either engaged wholly in Jhum cultivation or alongwith permanent cultivation are considered as engaged in Jhum cultivation. Tribes which constitute at least five percent of the total tribal households in a state are considered as major tribes for that state.

Table (1) : Percentage of households engaged in cultivation and percentage of cultivator households engaged in Jhum cultivation by household group/major tribe

household group/ major tribe	number of sample households	percentage of households engaged in cultivation (0.00)	percentage of cultivator house- holds engaged in Jhum cultivation (0.00)
(1)	(2)	(3)	(4)
<u>State - Arunachal Pradesh</u>		<u>number of sample villages - 234</u>	
1. <u>scheduled caste</u>	33	6.25	100.00
2. <u>scheduled tribe</u>			
2.1 Adi Koryong	687	84.43	75.69
2.2 Apatani	1219	90.65	0.27
2.3 Bangni	1110	91.53	99.80
2.4 Hrang Nampa	1045	95.15	84.89
2.5 Gallong	1304	86.66	90.35
2.6 Mohnpa	770	77.92	6.83
2.7 Masi	1244	98.39	99.59
2.8 Tagin	1187	89.64	99.44
2.9 Tano	1150	92.09	100.00
2. <u>all scheduled tribes</u>	13174	87.36	72.58
3. <u>others</u>	5847	22.00	4.73
4. <u>total</u>	19054	67.15	65.52
<u>State - Assam (Hill districts)</u>		<u>number of sample villages - 59</u>	
1. <u>scheduled caste</u>	361	80.61	2.75
2. <u>scheduled tribe</u>			
2.1 Dimas (Kachari)	250	98.00	77.55
2.2 Hkir	738	90.92	48.14
2.3 Naga	102	100.00	59.80
2.4 Boro-Boro Kachari	205	84.39	-
2.5 Kachari including Sonial	111	91.89	21.59
2. <u>all scheduled tribes</u>	1902	92.06	46.26
3. <u>others</u>	1256	50.76	0.68

State - <u>Manipur (hill districts)</u>		<u>number of sample villages - 64</u>	
1. <u>scheduled caste</u>	-	-	-
2. <u>scheduled tribe</u>	729		
2.1 Jaintia	729	97.26	96.75
2.2 Kabul	636	85.38	78.82
2.3 Marama	587	97.96	99.31
2.4 Mao	650	100.00	100.00
2.5 Thakhal	1060	100.00	60.30
2.6 Mador	556	91.01	67.39
2. <u>all scheduled tribes</u>	5054	95.92	83.98
3. <u>others</u>	298	99.31	91.61
4. <u>total</u>	5342	96.11	84.39
State - <u>Meghalaya</u>		<u>number of sample villages - 158</u>	
1. <u>scheduled caste</u>	120	35.83	-
2. <u>scheduled tribe</u>			
2.1 Garo	3111	86.95	75.16
2.2 Khasi & Jaintia	6847	84.94	61.23
2. <u>all scheduled tribes</u>	10572	85.17	62.96
3. <u>others</u>	1526	36.30	4.88
4. <u>total</u>	12218	78.58	59.33
State - <u>Tripura</u>		<u>number of sample villages - 112</u>	
1. <u>scheduled caste</u>	2432	68.72	0.04
2. <u>scheduled tribe</u>			
2.1 Tripuri	1224	79.01	26.77
2.2 Jamatia	372	86.80	28.42
2.3 Reang	159	65.51	76.37
2. <u>all scheduled tribes</u>	2379	76.92	30.85
3. <u>others</u>	7570	62.60	0.67
4. <u>total</u>	12381	67.76	11.12

2.2 It is observed that though all the major tribes in these States are mainly engaged in cultivation but their engagement in Jhum cultivation varies between different tribes in a state. As for example none of the households belonging to tribe Boro-Boro Kachari of Assam reported engagement in Jhum cultivation. Also Apatanis in Arunachal Pradesh are not inclined in Jhum cultivation. Less than one-fourth of the cultivator households belonging to Birang Momp and Momp tribes of Arunachal Pradesh, Kachari including Sonial of Assam, and less than half of such households of Likir tribes in Assam and Tripuri and Jamatia tribes in Tripura are engaged in Jhum cultivation. The overall percentage of all cultivator scheduled tribe households engaged in Jhum cultivation comes out as 72.58 for Arunachal Pradesh, 46.26 Assam, 83.98 for Manipur, 62.96 for Meghalaya and 30.85 for Tripura.

AV. STATE DURATION OF JHUM CYCLE

3.1 The average duration of Jhum cycle (that is the total number of years for which a plot is expected to be cultivated at a stretch together with the number of years for which, the plot is left uncultivated before being taken up for recultivation) for each surveyed village was collected in the village schedule. It is one of the most important feature in Jhum cultivation and normally its duration depends among other things on the total land available for jhuming; and the concentration of rural population in that area.

In Table (2) average duration jhum cycle in years (0.0) for surveyed villages along with average size of land per household under jhum cultivation in hectares (0.00) and the density of rural population per square kilometre (based on 1971 census) for the States are shown.

Table (2) : Average duration of jhum cycle in years (0.0), average size of land per household under jhum cultivation in hectares (0.00) and density of rural population per square kilometre by states

north-eastern states	average duration of jhum cycle in years (0.0)	average size of land per household under jhum cultivation in hectares (0.00)	density of rural population per sq.km, (based on 1971 census)
(1)	(2)	(3)	(4)
1. Arunachal Pradesh	7.4	1.60	5.39
2. Assam (Hill districts)	4.7	0.99	29.26
3. Manipur (Hill districts)	5.6	0.99	16.87
4. Meghalaya	7.0	0.61	38.41
5. Tripura	4.7	0.47	133.59

3.2 It appears in general that except for Meghalaya the average duration of jhum cycle in years (0.0) and the average size of land per household under jhum cultivation in hectares (0.00) are higher where the concentration of population in the rural sector is less. In Arunachal Pradesh where the density of rural population is lowest the average duration of jhum cycle comes out as 7.4 years and the average size of land per household under jhuming as 1.60 hectares which are highest compared to corresponding figures of other States, and the respective figures for Tripura with 4.7 years and 0.47 hectares are lowest where the density of rural population is highest.

HOUSEHOLD INDUSTRY AND OCCUPATION

4.1 A vast majority of the jhum cultivating households reported agriculture as their household industry. Table (3) shows the percentage of households engaged in selected agricultural occupations by household group for these States.

Table (3) : Percentage of households engaged in selected agricultural occupations by household group

household group	number of sample households with jhum cultivation	percentage (0.00) of households engaged in agricultural occupations	percentage (0.00) of households engaged in <i>Selected agri. Cultural Occupation</i>			
			cultivators (owners)	cultivators (tenants)	agricultural labourers	other farm workers including plantation labourers
(1)	(2)	(3)	(4)	(5)	(6)	(7)
<u>State - Arunachal Pradesh</u>						
1. scheduled caste	-	-	-	-	-	-
2. scheduled tribe	1635	97.97	97.97	-	-	-
3. others	13	76.92	76.92	-	-	-
4. total	1648	97.80	97.80	-	-	-
<u>State - Assam (Hill districts)</u>						
1. scheduled caste	9	100.00	100.00	-	-	-
2. scheduled tribe	221	100.00	91.40	-	-	-
3. owners	1	-	-	-	-	-
4. total	231	99.57	91.34	-	-	-
<u>State - Manipur (Hill districts)</u>						
1. scheduled caste	-	-	-	-	-	-
2. scheduled tribe	502	98.20	98.20	-	-	-
3. others	-	-	-	-	-	-
4. total	502	98.20	98.20	-	-	-

State - Meghalaya

1. scheduled caste	-	-	-	-	-	-
2. scheduled tribe	1036	89.75	71.72	3.76	12.06	1.06
3. others	-	-	-	-	-	-
4. total	1036	89.75	71.72	3.76	12.06	1.06

State - Tripura

1. scheduled caste	1	100.00	100.00	-	-	-
2. scheduled-tribe	99	88.79	56.57	2.02	25.20	4.04
3. others	9	66.67	55.56	-	11.11	-
4. total	109	87.16	56.89	1.83	22.06	3.67

4.2 In all these States except Meghalaya and Tripura the households reported engagement in agricultural occupations are mainly engaged as cultivator (owners). The percentage of households engaged as agricultural labourers are 12.06 and ^{26.06}~~26.67~~ Meghalaya and Tripura respectively.

CROPPING PATTERN

5.1 Jhumiyas normally raise their crops in mixture on the same plot of land which covers both food crops and cash crops. The food crops produced are mainly consumed by the households themselves and the cash crops are normally offered for sale to meet the other necessities of life. The system of mixed ^{Cropping} ~~particular~~ has an advantage as it provides an insurance against failure of any particular crop. The major crops normally raised in jhum plots as revealed from the survey have been presented in Table (4) for these States.

Table (4) : List of major crops raised in jhum plots by state

north-eastern states	major crops
(1)	(2)
1. Arunachal Pradesh	Paddy, maize, other cereals, pulses, oilseeds, potatoes, vegetables, ginger, chillies, tobacco, sweet potato and arum, etc.
2. Assam (Hill districts)	Paddy, maize, oilseeds, potatoes, vegetables, ginger, chillies and arum, etc.
3. Manipur (Hill districts)	Paddy, maize, ginger, chillies etc.
4. Meghalaya	Paddy, maize, other cereals, oilseeds, potatoes, vegetables, ginger, chillies, cotton, tapioca, sweet potato and arum etc.
5. Tripura	Paddy, oilseeds, vegetables, jute, mesta, cotton etc.

3.2 Particulars about production of 32 crops normally raised by the jhus cultivating households were collected in the household schedule. The percentage of households reporting production of different crops has been shown in Table (5).

Table (5) : Percentage (0.00) of households reporting production in different crops by state

crop	Assamachal (Assam)	Assam (Hill districts)	Manipur (Hill districts)	Meghalaya	Tripura
(1)	(2)	(3)	(4)	(5)	(6)
1. paddy	80.95	96.97	87.85	66.41	98.17
2. wheat	1.46	-	-	-	-
3. maize	87.14	19.48	15.14	48.07	3.67
4. other cereals	68.57	-	0.60	54.54	-
5. gram	-	0.43	-	-	-
6. mug	0.06	-	-	-	-
7. tur	-	0.43	-	0.10	-
8. urd	-	-	-	0.10	-
9. other pulses	11.65	0.43	1.59	-	-
10. rape seed	-	2.60	-	-	-
11. mustard	0.30	0.43	1.39	-	-
12. groundnut	-	1.30	-	-	-
13. other oil seeds	5.52	17.75	-	16.60	44.95
14. potatoes	7.04	28.14	0.60	10.14	0.92
15. other vegetables	34.53	17.75	1.59	13.32	42.80
16. oranges	-	-	-	-	-
17. pineapples	-	-	-	0.19	-
18. other fruits	3.58	4.76	1.39	0.29	-
19. ginger	14.14	6.06	7.57	17.15	-
20. chillies	29.92	20.78	6.18	23.07	-
21. turmeric	-	1.73	-	1.93	-
22. sugar cane	-	-	0.20	-	-
23. jute	0.49	3.46	-	4.25	8.26
24. hemp	-	-	-	-	-
25. mesta	-	-	-	-	66.06
26. cotton	-	3.90	1.00	11.29	12.84
27. tobacco	7.04	-	-	-	-
28. tea	-	-	-	-	-
29. tapioca	4.61	-	-	21.43	-
30. sweet potato	7.46	0.43	-	14.00	-
31. azim etc.	14.81	7.79	4.18	27.22	-
32. any other crop	12.50	2.60	-	0.87	-
number of sample households	1648	231	502	1036	109

.....P/B.

5.3 Paddy is cultivated by most of the households in jhum fields. A large number of households from Arunachal Pradesh and Meghalaya reported cultivation of maize and other types of cereals. Pulses are cultivated mainly in Arunachal Pradesh. All the States reported production of oilseeds. Production of cash crops like ginger and chillies are reported from all States except Tripura. Cultivation of fibre crops like jute, mesta and cotton are reported by a large number of households in Tripura. A number of households from Arunachal Pradesh reported production of tobacco. None of the households in these States reported production of tea in their jhum plots. Cereal substitutes like tapioca, sweet potato and arum etc. are produced by most of the States.

AVERAGE YIELD OF CEREAL CROPS

6.1 As almost all the households reported production of one or more types of cereal crops in their jhum fields here an attempt has been made to calculate the statewide average yield of cereal crops per hectare with the help of area and yield figures available per jhum cultivating household. Table (6) presents the average yield of cereal crops in Kg. (0.00) per hectare alongwith the average yield of cereal crops in Kg. (0.00) per jhum cultivating household.

Table (6) : Average yield of cereal crops in Kg. (0.00) per jhum cultivating household and per hectare by state

north-eastern states	number of sample households with jhum cultivation	average area per jhum cultivating household in hectares (0.00)	average yield per jhum cultivating household in Kg. (0.00)	average yield per hectare in Kg. (0.00)
(1)	(2)	(3)	(4)	(5)
1. Arunachal Pradesh	1648	1.60	1020.13	637.58
2. Assam (Hill dists.)	231	0.99	1262.18	1274.93
3. Manipur (Hill dists.)	502	0.99	1252.70	1265.35
4. Meghalaya	1036	0.61	410.30	672.62
5. Tripura	109	0.47	329.50	701.06

6.2 It is observed that the yield rate of cereal crops per hectare is highest in Assam with 1274.93 Kg. and lowest in Arunachal Pradesh with 637.58 Kg. It comes out as 1265.35 Kg. for Manipur, 672.62 Kg. for Meghalaya and 701.06 Kg. for Tripura.

CONSUMPTION OF CEREALS OUT OF HOME PRODUCTION

7.1 As stated earlier most of the food crops produced by the jhum cultivating households are consumed by themselves. The average quantity (in Kg. 0.00) of cereals consumed per person per month out of home production has presented in Table (7) alongwith other related information.

Table (7) : Average per person per month quantity of cereals consumed in Kg. (0.00) out of home production, average per household area under jhum cultivation in hectares (0.00), percentage of households reported industry other than agriculture and occupation other than cultivation by state

north-eastern states	number of sample households with jhum cultivation	average per person per month consumption of cereals in Kg. (0.00) out of home production	average per household area under jhum cultivation in hectares (0.00)	percentage of households reported industry other than agriculture (0.00)	percentage of households reported occupation other than cultivation (0.00)
(1)	(2)	(3)	(4)	(5)	(6)
1. Arunachal Pradesh	1048	15.30	1.60	2.13	2.20
2. Assam (Hill dists.)	231	12.09	0.99	0.43	8.66
3. Manipur (Hill dists.)	502	16.06	0.99	1.80	1.80
4. Meghalaya	1036	5.42	0.61	10.25	24.52
5. Tripura	109	4.45	0.47	12.84	41.28

7.2 The average per person per month consumption of cereals out of production from jhum lands is highest in Manipur with 16.06 Kg. and it is 15.30 Kg. for Arunachal Pradesh and 12.09 Kg. for Assam. But for the States of Meghalaya and Tripura it is 5.42 Kg. and 4.45 Kg. respectively which are relatively low when compared with the corresponding figures of other three States. This may be due to the reason that the average per household area under jhum cultivation is relatively more in Arunachal Pradesh, Assam and Manipur as well as a vast majority of the households in these States are engaged in agricultural activities. In Meghalaya and Tripura the average per household land under jhumming is comparitably low as also higher percentage of households in these two States are engaged in activities other than agriculture which suggests that they procure a part of their requirements of cereals from other sources including purchase.

HOUSEHOLD ANNUAL INCOME

8.1 The per household gross annual income received from production of different crops under jhum cultivation by the jhum cultivating households in these States as also the gross annual income earned per hectare have been calculated by using the average selling price of different crops and are shown in Table (8).

Table (8) : Per household and per hectare gross annual income in Rs.(0.00) from jhum cultivation by states

north eastern states	number of sample households with Jhum cultivation	average area per jhum cultivating household in hectares (0.00)	per household gross annual income in Rs.(0.00)	per hectare gross annual income in Rs.(0.00)
(1)	(2)	(3)	(4)	(5)
1. Arunachal Pradesh	1648	1.60	1390.78	869.24
2. Assam (Hill dists.)	231	0.99	1469.46	1484.30
3. Manipur(Hill dists.)	502	0.99	1071.64	1082.47
4. Meghalaya	1036	0.61	847.87	1389.95
5. Tripura	109	0.47	417.00	887.23

8.2 The per household gross annual income from jhum cultivation is highest in Assam with Rs.1469.46 where the average per household area under jhumming is 0.99 hectares and is lowest in Tripura with Rs.417.00 and area 0.47 hectares. The per hectare gross annual income earned by these households from jhumming is maximum for Assam with Rs.1484.30 and it is Rs.1389.95 for Meghalaya, Rs.1082.47 for Manipur, Rs.887.23 for Tripura and Rs.869.24 for Arunachal Pradesh.

AREA OF JHUM PLOT

9.1 In the household schedule for jhum cultivation an attempt was made to get the area of jhum plots by making actual measurement with a measuring stick of 1 metre long. The length and breadth of the plot were measured by the measuring stick and from those entries area of the plot in hectares (0.00) was calculated and recorded in the schedule for roughly 25 percent of the sample households. The area per jhum plot in hectares (0.000) thus obtained has been given in Table (9) along with the corresponding figure arrived at from the number of jhum plots cultivated and area under jhum cultivation in hectares (0.00) recorded for each and every sample household.

Table (9) : Area per jhum plot in hectares(0.000) obtained from actual measurement and arrived at from household information about number of jhum plots and area under jhum cultivation.

north eastern states	number of sample plots	average area per jhum plot in hectares (0.000) from actual measurement	average area per jhum plot in hectares (0.000) based on number of jhum plots and area under jhum cultivation
(1)	(2)	(3)	(4)
1. Arunachal Pradesh	656	0.628	0.762
2. Assam(hill dists.)	46	0.579	0.635
3. Manipur (high dists.)	54	0.629	0.780
4. Meghalaya	307	0.443	0.439
5. Tripura	35	0.393	0.443

9.2 The average area per jhum plot in hectares (0.000) obtained from actual physical measurement of selected plots for all States except Meghalaya is somewhat smaller than those arrived at with the help of number of jhum plots and area under jhum cultivation collected from the sample households. For Meghalaya the two entries are almost same.