GOVERNMENT OF MAHARASHTRA

A REPORT ON
'HOUSEHOLD CONSUMER EXPENDITURE'
BASED ON DATA COLLECTED IN STATE SAMPLE OF
60Th ROUND OF NATIONAL SAMPLE SURVEY
(JANUARY – JUNE, 2004)

VOL. I

**Directorate of Economics and Statistics, Planning Department,
Government of Maharashtra, Mumbai**

PREFACE

The Directorate of Economics and Statistics has prepared a report on 'Household consumer expenditure' based on the data of state sample collected in the 60th round (January – June, 2004) of National Sample Survey.

2. Vol. I of the report contains important findings of the survey in 'executive summary' while important results are given in 'survey findings'. Estimation procedure, concepts and definitions and some statistical tables are given in vol. II, which is available on the website http://mahades.maharashtra.gov.in.

3. I hope results of this survey will be useful to senior officers of the Government involved in policy framing, researchers, economists and academicians.

Mumbai

Director of Economics and Statistics,
Planning Department,
Government of Maharashtra.

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Chapter-1
Executive Summary

Background

1.   An enquiry of household consumer expenditure generates a very important indicator of living standards called monthly per capita expenditure (MPCE).The present report envisages the factual position on the basis of 60th round (Jan-June 2004) of NSS data on household consumer expenditure. The report indicates the average expenditure incurred and the monetary value of consumption expenditure of rural and urban households for various groups of items namely (i) food, pan, tobacco, intoxicants and fuel & light,(ii) clothing and footwear, and (iii) miscellaneous goods and services and durable articles. The distribution of population & households according to monthly per capita expenditure classes is generally accepted as an alternative to the distribution of population & households according to income groups (information on income is generally under reported but the information on expenditure can be more easily be sought).

Findings:-

2.   The average number of persons per household was found to be 4.81 per cent and 4.37 per cent for rural and urban areas respectively. In the previous quinquennial round i.e. NSS 55th round (Jul.1999 – June 2000) the average no. of persons per household was 4.7 per cent and 4.4 per cent for rural and urban areas respectively. During the survey period of Jan-June 2004, the average per capita expenditure (MPCE) was Rs.531 in rural and Rs.1066 in urban areas. It is seen that 46 per cent persons from 40 per cent households spent less than the average MPCE in rural areas while in the urban areas about 68 per cent persons from 51 per cent households had their MPCE less than the average.

3.   The expenditure on food items was 48 per cent, while on non-food items it was 52 per cent for rural areas. The corresponding figures for food and non-food items for urban areas were 36 per cent and 64 per cent respectively.

4.   A decline in the expenditure on food items is observed during the period of 1999 to 2004, while the expenditure on non-food items has been constantly rising during the period 1993 to 2004 in both rural and urban area.

5.   The expenditure on cereals in rural and urban areas was 16 per cent and 10 per cent of the MPCE respectively.   The per capita consumption of cereals was 10.35 Kg and 8.97 Kg for rural and urban areas respectively.

6.   Wheat was the major cereal consumed in both the areas. The monthly per capita quantity and value of wheat consumed was 3.46 kg and Rs.20.20 for rural areas, while the corresponding quantity and value for urban areas was 4.67 kg and Rs.50.02 respectively. The monthly per capita consumption of rice was 3.08 kg. for a price of Rs.30.64 for rural areas. In the urban areas, the corresponding quantity and value was 3.12 kg, and Rs.42.72 respectively.

7.   The consumption of rice has increased marginally while that of wheat has decreased in both rural and urban areas during 1999 to 2004. Consumption of other cereals (jowar and bajra) was more in rural than urban areas.

8.   The proportion of ST, SC, OBC and Others population for the state are 8.0 per cent, 15.3 per cent, 29.7 per cent and 47.1 per cent respectively.

Other important survey findings are:

- The literacy rate was 72.7 per cent and 88.5 per cent for rural and urban areas respectively.
- As many as 89 per cent households from the rural but only 65 per cent households from the urban areas had their own dwelling units.
- The percentage of households living in pucca structure was 54 per cent and 83 per cent respectively for rural and urban areas.
- 81 per cent households in the rural areas still use 'firewood' as fuel for cooking.
- Only 77 per cent rural households use electricity for lighting.
- In rural areas, 'Agriculture labour' households were 37 per cent followed by 'self employed in agriculture' households (34 per cent); whereas in the urban areas, 'regular wages/salaried' households were found to be 46 per cent while 'self employed' households were 35 per cent.

Survey Recommendations

The following recommendations emerge from the survey.

(i)   The situation that about 81 percent of rural households still use firewood as fuel for cooking needs to be addressed on priority because of its ill effects on the ecology as well as on health.

(ii)   Only 77 per cent rural households use electricity for lighting. The present scenario regarding availability as well as the affordability of electricity need to be improved.

Chapter-2
Survey Findings

Introduction

2.1   Information on household consumer expenditure was collected in two types of schedules of enquiry namely type 1 and type 2. These schedules were canvassed on two different sets of households. The main difference in the schedules was the period of reference. Part – A contains the combined results of the survey for the State while, the comparative results obtained from the two schedule types are shown in Part – B of this report.

2.2   The results presented in this report are based on information collected from 680 sample units comprising of 272 villages and 408 urban blocks. In rural area, 537 and 533 households for schedule type 1 and 2 respectively and in urban area, 812 and 810 households for schedule type 1 and 2 respectively were surveyed.

Part - A

2.3   Table 1 gives the percentage distribution of households and persons according to the monthly per capita expenditure (MPCE) classes for rural and urban areas of the State. During the survey period of January – June, 2004, the average MPCE was Rs.531 in rural and Rs.1,066 in urban area. It is seen that 46 per cent persons from 40 per cent households spent less than the average MPCE in the rural areas, while in the urban areas about 60 per cent persons from about 51 per cent households had their MPCE less than the average. The average number of persons per household is found to be 4.81 persons and 4.37 persons for rural and urban areas respectively.

Table 1

Percentage distribution of households and persons according to monthly per capita expenditure classes

MPCE class (RS)	Percentage distribution of		Average no. of persons per household
	Households	Persons	
(1)	(2)	(3)	(4)
(Rural)			
0-225	0.7	0.5	3.08
225-255	0.9	1.7	9.46
255-300	2.0	3.0	7.19
300-340	2.1	2.8	6.28
340-380	4.8	6.2	6.26
380-420	9.7	10.8	5.35
420-470	8.9	9.4	5.09
470-525	10.7	11.3	5.09
525-615	17.1	18.2	5.11
615-775	19.7	18.1	4.41
775-950	9.8	8.0	3.95
>950	13.6	10.0	3.54
All	**100.0**	**100.0**	**4.81**

(Urban)			
0-300	0.3	0.3	4.62
300-350	1.1	1.7	6.74
350-425	1.8	2.9	7.02
425-500	3.9	5.3	5.83
500-575	4.9	6.0	5.34
575-665	5.2	6.4	5.40
665-775	9.2	10.9	5.13
775-915	10.1	11.6	5.00
915-1120	14.5	15.2	4.57
1120-1500	19.0	17.7	4.07
1500-1925	12.4	10.0	3.49
>1925	17.4	12.0	3.01
All	**100.0**	**100.0**	**4.36**

2.4   The value of consumption of broad groups of items per person for rural and urban areas of the State is given in Table 2. It is observed that the monthly per capita expenditure for the State was Rs.756.18. The expenditure on food items was 48 per cent, while on non-food items it was 52 per cent for rural areas. The corresponding figures in food and non-food items for urban areas were 36 per cent and 64 per cent respectively. Within food items, maximum expenditure was recorded on cereals, while in non-food items group, maximum expenditure was incurred on miscellaneous goods and services in both the areas.
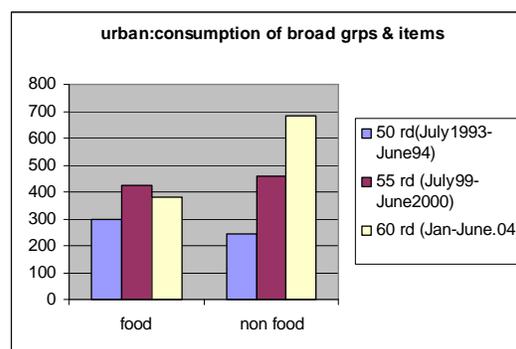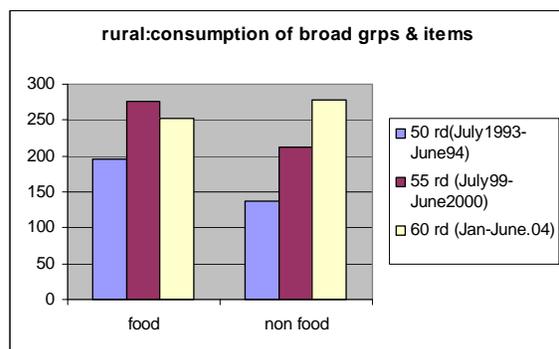
Table 2
Monthly per capita value of consumption of broad groups & items

Sr. No.	Item	50th round (1993-1994)			55th round(1999-2000)			60th round(Jan-June2004)		
		Rural	Urban	State	Rural	Urban	State	Rural	Urban	State
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1.	Cereals	55.95	63.13	58.48	81.65	97.91	88.01	84.46	102.48	91.37
		(16.8)	(11.6)	(14.4)	(16.7)	(11.1)	(13.7)	(15.9)	(9.6)	(12.4)
2.	Gram	0.77	0.89	0.41	0.90	1.36	1.08	0.71	1.32	0.95
		(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.1)	(0.1)	(0.1)
3.	Cereal substitutes	2.09	1.82	1.99	2.17	1.92	2.07	2.20	2.35	2.26
		(0.6)	(0.3)	(0.5)	(0.4)	(0.2)	(0.3)	(0.4)	(0.2)	(0.3)
4.	Pulses and their products	16.41	19.32	17.43	21.73	26.68	23.67	19.27	25.38	21.58
		(4.9)	(3.6)	(4.3)	(4.4)	(3.0)	(3.7)	(3.6)	(2.4)	(3.0)
5.	Milk and milk products	21.75	45.40	30.07	33.16	66.62	46.24	33.73	75.6	49.59
		(6.5)	(8.4)	(7.4)	(6.8)	(7.5)	(7.2)	(6.4)	(7.0)	(6.7)
6.	Edible oil	19.95	29.12	23.18	26.18	35.51	29.83	22.96	28.82	25.21
		(6.0)	(5.4)	(5.7)	(5.4)	(4.0)	(4.6)	(4.3)	(2.7)	(3.4)
7.	Meat, egg and fish	10.73	18.54	13.48	19.08	26.51	21.98	14.04	20.39	16.47
		(3.2)	(3.4)	(3.3)	(3.9)	(3.0)	(3.4)	(2.7)	(1.9)	(2.2)
8.	Vegetables	19.26	29.65	22.92	26.65	43.47	33.23	21.76	31.04	25.32
		(5.8)	(5.5)	(5.6)	(5.5)	(4.9)	(5.2)	(4.1)	(2.9)	(3.4)
9.	Fruits and nuts	11.29	21.78	14.98	15.85	30.88	21.73	14.38	23.90	18.03
		(2.4)	(4.0)	(3.7)	(3.2)	(3.5)	(3.4)	(2.7)	(2.2)	(2.5)
										Cont.

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
10.	Sugar	14.03	14.30	14.13	14.62	15.55	14.98	15.03	15.24	15.11
		(4.2)	(2.6)	(3.5)	(3.0)	(1.8)	(2.3)	(2.8)	(1.4)	(2.1)
11.	Salt and spices	9.84	11.04	10.26	14.93	16.45	15.52	10.14	11.41	10.63
		(3.0)	(2.1)	(2.5)	(3.1)	(1.9)	(2.4)	(1.9)	(1.1)	(1.4)
12.	Beverages and refreshment	14.24	42.15	24.06	19.12	63.00	36.28	14.01	44.42	25.67
		(4.3)	(7.8)	(5.9)	(3.9)	(7.1)	(5.6)	(2.6)	(4.2)	(3.5)
	Food total	196.31	297.29	231.85	276.02	425.86	334.60	252.69	381.71	322.19
		(59.0)	(54.8)	(57.0)	(56.5)	(48.1)	(52.0)	(47.6)	(35.8)	(41.1)
13.	Pan tobacco and intoxicants	9.20	16.37	11.72	12.74	15.22	13.71	8.10	9.27	8.55
		(2.8)	(3.0)	(2.9)	(2.6)	(1.7)	(2.1)	(1.5)	(0.9)	(1.2)
14.	Fuel and light	26.35	36.63	29.97	39.79	67.01	50.43	59.96	107.88	78.34
		(7.9)	(6.8)	(7.4)	(8.1)	(7.6)	(7.9)	(11.3)	(10.1)	(10.6)
15.	Clothing	22.56	25.23	23.50	36.37	55.90	44.01	41.15	64.34	50.27
		(6.8)	(4.7)	(5.8)	(7.4)	(6.3)	(6.8)	(7.8)	(6.0)	(6.8)
16.	Footwear	2.83	4.83	3.53	5.92	10.35	7.65	6.60	12.43	8.84
		(0.9)	(0.9)	(0.9)	(1.2)	(1.2)	(1.2)	(1.2)	(1.2)	(1.2)
17.	Misc. goods and services	67.57	151.13	96.97	112.80	286.33	180.64	149.62	457.12	267.58
		(20.3)	(27.9)	(23.8)	(23.1)	(32.3)	(28.1)	(28.2)	(42.9)	(36.4)
18.	Durable goods	8.12	11.24	9.22	5.29	24.71	12.88	12.73	33.31	20.41
		(2.4)	(2.1)	(2.3)	(1.1)	(2.8)	(2.0)	(2.3)	(3.1)	(2.8)
	Non-food total	136.62	245.43	174.91	212.91	459.52	309.32	278.16	684.35	433.99
		(41.0)	(45.2)	(43.0)	(43.6)	(51.9)	(48.0)	(52.4)	(64.2)	(59.0)
	Total consumer expenditure	332.92	542.72	406.75	488.93	885.38	643.93	530.85	1,066.06	756.18
		(100.0)	(100.0)	(100.0)	(100.00)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Note: **Figures in brackets indicate percentages.**

rural:consumption of broad grps & items

□ 50 rd(July1993-June94)
■ 55 rd (July99-June2000)
□ 60 rd (Jan-June.04)

urban:consumption of broad grps & items

□ 50 rd(July1993-June94)
■ 55 rd (July99-June2000)
□ 60 rd (Jan-June.04)

2.5   Table 3 gives the monthly per capita quantity and value of consumption of cereals for rural and urban areas of the State. The monthly per capita consumption of rice was 3.08 kg for price of Rs.30.64 for rural areas, while, in the urban areas, the corresponding quantity and value was 3.12 kg and Rs.42.72 respectively. Wheat was the major cereal consumed in both the areas. The monthly per capita quantity and value of wheat consumed was 3.46 kg and Rs.20.20 for rural areas, while the corresponding quantity and value for urban areas was 4.67 kg and Rs.50.02 respectively. It is interesting to note that the total consumption of cereals was found to be more for rural areas than that of urban areas in terms of quantity, while the value of consumption is observed to be higher for urban areas. It is seen that value of consumption of cereals has increased in both rural and

urban areas but the quantity has consistently reduced in urban areas from 1993 to 2004 while it has reduced during 1993-1999 but has marginally increased during 1999-2004 in rural areas.

Table 3
Monthly per capita quantity and value of consumption of cereals

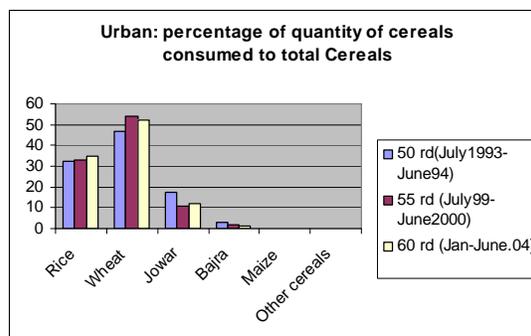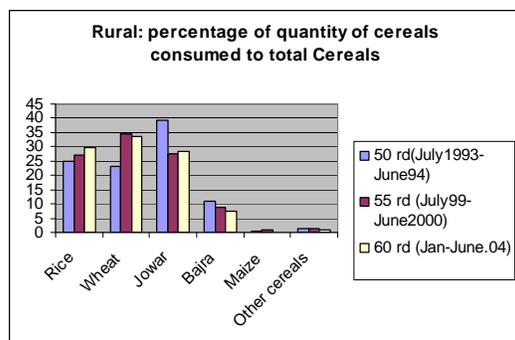| Cereal	50th round (1993-1994)				55th round(1999-2000)				60th round(Jan-June2004)			
	Quantity		Value (Rs.)		Quantity		Value (Rs.)		Quantity		Value (Rs.)	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Rice	3.03	3.25	20.97	26.38	2.84	3.09	27.82	38.82	3.08	3.12	30.64	42.72
Wheat	2.81	4.69	14.68	28.96	3.63	5.07	27.19	48.50	3.46	4.67	28.20	50.02
Jowar	4.77	1.73	15.54	6.66	2.88	1.01	19.77	9.19	2.96	1.05	20.44	8.82
Bajra	1.30	0.30	4.15	1.11	0.91	0.16	5.58	1.21	0.76	0.13	4.71	0.88
Total cereals	12.09	9.97	55.95	63.16	10.26	9.33	80.36	97.72	10.35	8.97	84.47	102.48
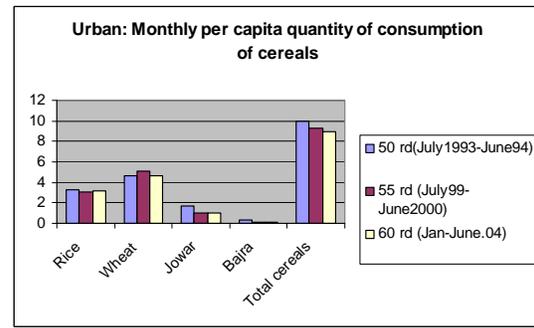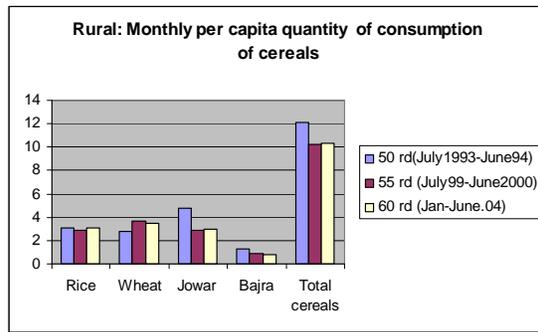
2.6   It is observed from table 4 that the share of expenditure on cereals in total consumer expenditure for rural areas was more than that for urban areas. In rural areas, rice was the major item of consumption, while it was wheat in the urban areas. Out of total cereals, wheat was the most consumed item in terms of quantity in both the areas of the State.

Table 4
Monthly per capita percentage of expenditure on cereals to total consumer expenditure and percentage distribution of quantity of cereals consumed by items of cereals

Cereal	50th round (1993-1994)				55th round(1999-2000)				60th round(Jan-June2004)			
	percentage of expenditure on cereals to total expenditure		percentage of quantity of cereals consumed to total Cereals		percentage of expenditure on cereals to total expenditure		percentage of quantity of cereals consumed to total Cereals		percentage of expenditure on cereals to total expenditure		percentage of quantity of cereals consumed to total Cereals	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Rice	6.30	4.86	25.06	32.60	5.69	4.38	27.15	33.05	5.77	4.01	29.76	34.78
Wheat	4.41	5.34	23.24	47.04	5.56	5.48	34.70	54.22	5.31	4.69	33.43	52.06
Jowar	4.67	1.24	39.45	17.35	4.04	1.04	27.53	10.80	3.85	0.83	28.60	11.71
Bajra	1.25	0.20	10.75	3.01	1.04	0.14	8.70	1.71	0.89	0.08	7.34	1.45
Maize	0.02	0.00	0.25	0.00	0.09	0.00	0.67	0.11	0.01	0.00	0.10	0.00
Other cereals	0.15	0.00	1.25	0.00	0.27	0.10	1.25	0.11	0.08	0.01	0.77	0.00
Total cereals	**16.80**	**11.64**	**100.00**	**100.00**	**16.70**	**11.06**	**100.00**	**100.00**	**15.91**	**9.62**	**100.00**	**100.00**
All food items	*50.36*	*41.37*	*x*	*x*	*50.14*	*41.33*	*-*	*-*	*47.60*	*35.81*	*x*	*x*

6

Rural: percentage of quantity of cereals consumed to total Cereals

Legend:
- 50 rd(July1993-June94)
- 55 rd (July99-June2000)
- 60 rd (Jan-June.04)

Urban: percentage of quantity of cereals consumed to total Cereals

Legend:
- 50 rd(July1993-June94)
- 55 rd (July99-June2000)
- 60 rd (Jan-June.04)

2.7   It is observed from the table 5 that rice was the most costly item of cereal in both the areas. The prices of cereals were noted to be more (by 40 per cent) in the urban areas than that of rural areas. However, the price of bajra was almost the same in both rural and urban areas of the State.

Table 5
Average price of different items of cereals as derived from the value and
quantity figures of consumer expenditure

Item	Average price (Rs.)	
	Rural	Urban
(1)	(2)	(3)
Rice	9.95	13.69
Wheat	8.15	10.71
Jowar	6.90	8.40
Bajra	6.19	6.77
Total cereals	**8.16**	11.42

2.8   From table 6, it is observed that the literacy rate was 72.7 per cent and 88.5 per cent for rural and urban areas respectively. The number of illiterate females was found to be more than double the illiterate males in both the areas of the State.
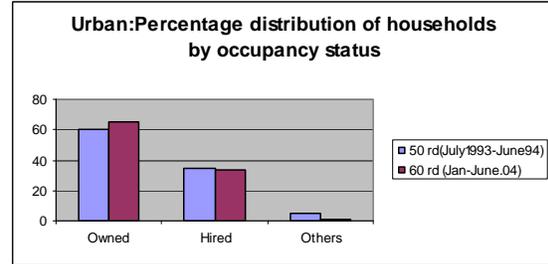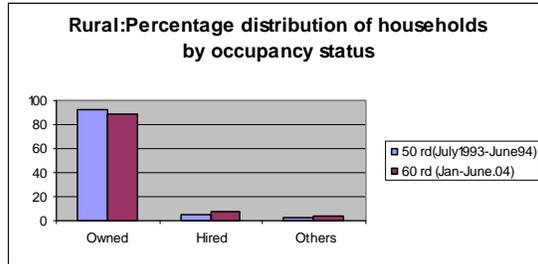
Table 6
Percentage distribution of persons of age 7 years and above by level of education

Education level	Rural			Urban		
	Male	Female	Persons	Male	Female	Persons
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.Not literate	17.5	38.1	27.3	6.1	17.6	11.5
2.Literate below primary	13.5	10.4	12.1	9.4	8.5	9.0
3.Primary	19.6	20.4	20.0	16.2	17.1	16.6
4.Middle	29.3	20.9	25.3	30.4	27.2	28.9
5.Secondary	10.6	6.9	8.8	17.5	13.0	15.4
6.Higher secondary	4.5	2.1	3.3	8.6	7.9	8.3
7.Higheer secondary & above	5.0	1.3	3.2	11.7	8.6	10.3
8.**All**	**100**	**100**	**100**	**100**	**100**	**100**

2.9   Percentage distribution of households by occupancy status of the dwelling units for rural and urban areas of the State is given in Table 7. It is seen from the table that 89 per cent households from the rural areas and 65 per cent households from the urban areas had their own dwelling. The proportion of households having hired accommodation was observed to be 7 and 34 per cent for rural and urban areas respectively.

Table 7
Percentage distribution of households by occupancy status of the dwelling units

Type of	50th round		60th round	
Occupancy status	Rural	Urban	Rural	Urban
Owned	92.3	60.4	89.2	65.3
Hired	4.7	34.5	7.5	33.7
Others	3.0	5.1	3.3	1.0
All	100	100	100	100

Rural:Percentage distribution of households by occupancy status

■ 50 rd(July1993-June94)
■ 60 rd (Jan-June.04)

Urban:Percentage distribution of households by occupancy status

■ 50 rd(July1993-June94)
■ 60 rd (Jan-June.04)

2.10   It is observed from table 8 that 54 per cent and 83 per cent households in rural and urban areas respectively lived in pucca structure. The households staying in semi pucca structures were significantly more in rural areas than that in urban areas.

Table 8
### Percentage distribution of households by type of structure

Type of structure	Rural	Urban
Pucca	53.6	82.5
Semi pucca	36.5	13.9
Serviceable katcha	8.6	3.0
Unserviceable katcha	1.3	0.06
No structure	0.0	0.0
All	100	100

2.11   It is understood from table 9 that as many as 81 per cent households in the rural areas used 'firewood' as fuel for cooking. This situation needs to be addressed because of its ill effects on the ecology as well as on health, on priority basis. LPG is the primary source of energy for cooking in urban area with 68 per cent households using it. The use of LPG in rural areas is still limited to only 15 percent of households. It is further observed that no cooking arrangement was found in two per cent households from rural areas and seven per cent households from urban areas. The second primary source of energy for cooking in the urban areas was 'kerosene'.

Table 9

Percentage distribution of households by primary source of energy for cooking

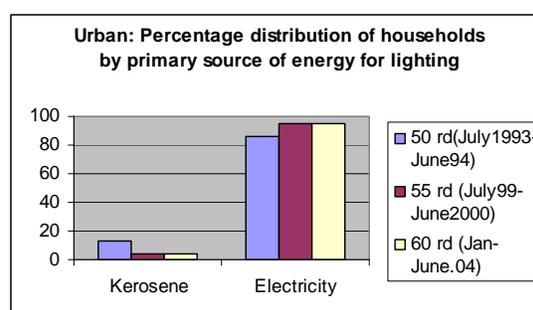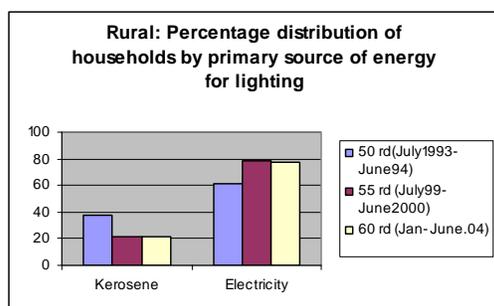| Type of primary source	50th round (1993-1994)		55th round(1999-2000)		60th round(Jan-June2004)	
	Rural	Urban	Rural	Urban	Rural	Urban
No cooking arrangement	1.1	6.8	1.2	8.1	1.8	6.6
Coke, coal	0.5	0.7	0.1	0.6	0.0	0.1
Firewood and chips	86.0	16.8	83.0	10.2	80.8	11.3
LPG	5.0	39.0	8.5	55.8	15.0	67.7
Gobar gas	1.3	0.1	0.5	0.0	0.2	0.0
Dung cake	1.5	0.1	0.5	0.0	0.0	0.0
Char coal	-	-	-	-	0.0	0.0
Kerosene	4.6	36.5	6.2	25.3	2.0	14.1
Electricity	-	-	-	-	0.2	0.2
Others	0.0	0.0	0.0	0.0	0.0	0.0
All	100.0	100.0	100.0	100.0	100.0	100.0
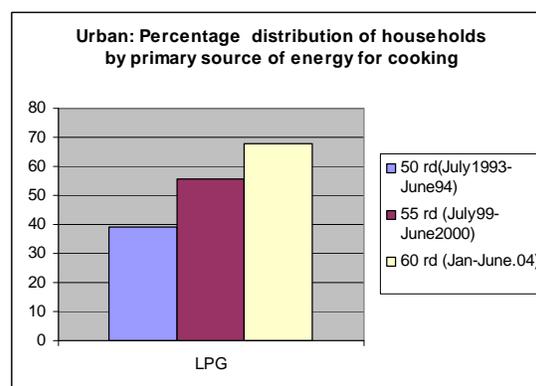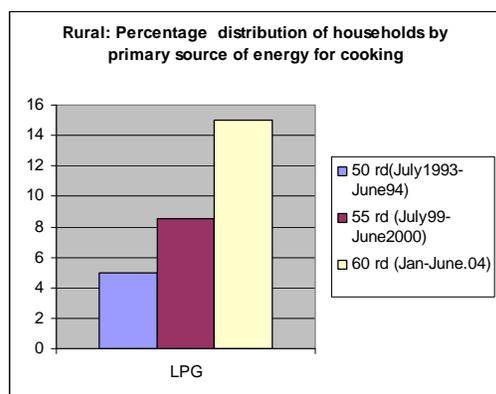
2.12   It is indicated from table 10 that 'electricity' was the major primary source of lighting in both the areas. The next source of energy for lighting was observed to be kerosene in both the rural and urban areas. The fact that only 77 percent of rural households use electricity as source of lighting speaks about its availability as well as the affordability.

Table 10

Percentage distribution of households by primary source of energy for lighting

Type of primary source	50th round (1993-1994)		55th round(1999-2000)		60th round(Jan-June2004)	
	Rural	Urban	Rural	Urban	Rural	Urban
Kerosene	37.9	13.3	21.2	4.5	21.3	4.0
Gas	-	-	-	-	0.2	0.2
Electricity	61.5	86.1	78.3	95.4	77.3	95.3
Others	0.7	0.6	0.5	0.1	1.2	0.5
All	100.0	100.0	100.0	100.0	100.0	100.0

Rural: Percentage distribution of households by primary source of energy for lighting

Legend:
- 50 rd(July1993-June94)
- 55 rd (July99-June2000)
- 60 rd (Jan-June.04)

Urban: Percentage distribution of households by primary source of energy for lighting

Legend:
- 50 rd(July1993-June94)
- 55 rd (July99-June2000)
- 60 rd (Jan-June.04)

2.13   It is observed from the table 11 that the households in the category 'agriculture labour' were 37 per cent followed by households in the category 'self employed in agriculture' (34 per cent) in rural areas. Whereas, in the urban areas, the households in the category 'regular wages' were found to be 46 per cent while housholds in the category 'self employed' were observed to be 35 per cent.

Table 11
Percentage distribution of households by household types

Household type	Percentage of households
Rural	
Self employed in non-agriculture	9.8
Agriculture labour	36.8
Other labour	6.9
Self employed in agriculture	34.0
Others	12.5
All	100.0
Urban	
Self employed in non-agriculture	34.5
Regular wages/salary earning	46.1
Casual labour	10.4
Others	9.0
All	100.0

Part - B

2.14   As mentioned earlier, the information on household consumption was collected from two different sets of households. In one set, data on all items of food, as well as pan, tobacco and intoxicants was collected with reference period of 30 days as usual in the past rounds. The schedule used for this set of households was called schedule type 1. In schedule type 2, information on the food items like edible oil, egg, fish and meat, vegetables, fruits, spices, beverages and processed food as well as pan, tobacco and intoxicants was collected with the last 7 days as reference period. The two schedule types differ only in respect of reference period for collection of data on the items mentioned earlier. In all other respects, they are identical. It has been done mainly for comparing the estimates of 60th round with those of earlier rounds.

2.15 Table 12 gives percentage distribution of persons and average household size by different MPCE classes for rural and urban areas of the State, as obtained from schedule type 1 & 2 respectively. In the rural areas, 8 per cent population had MPCE below Rs.300 according to schedule type 1, as compared to only 2 per cent according to schedule type 2. However, It is interesting to note that 55 per cent of the population had their MPCE below the average (of Rs.531) as per the schedule type 1 for rural areas, while 36 per cent were below state average as per schedule type 2 indicating how the recall bias can affect the data. In urban areas, about 65 per cent population as per schedule type 1 and 57 per cent as per schedule type 2 had their MPCE less than the average MPCE (of Rs.1066). The average number of persons per household was maximum (9.46) for the MPCE class Rs.225-255 in rural areas, while it was 7.2 for the MPCE class Rs.350-425 in urban areas. The minimum average household size is observed in the lowest MPCE class Rs. 0-225 in rural areas and highest MPCE class Rs. 1925 + in urban areas.

Table 12
Percentage distribution of persons and average household size by MPCE classes

MPCE class(Rs.)	Percentage of persons		Average household size	
	Sch. type 1	Sch. type 2	Sch. type 1	Sch. type 2
Rural				
<225	0.8	0.1	4.59	1.00
225-255	2.7	0.0	9.11	0.00
255-300	4.2	1.6	7.15	7.19
300-340	3.9	2.1	6.35	7.07
340-380	8.9	4.0	6.42	6.39
380-420	11.7	9.9	4.84	6.25
420-470	12.6	6.0	5.03	5.29
470-525	10.6	12.2	4.97	5.21
525-615	16.5	19.3	5.11	5.24
615-775	13.3	22.3	3.93	4.71
775-950	6.2	10.1	4.17	3.82
950>=	8.7	12.2	3.43	3.35
All classes	100.0	100.0	4.83	4.74
Urban				
<300	0.2	0.5	3.20	6.00
300-350	2.5	1.1	6.03	9.43
350-425	4.5	1.8	6.99	7.25
425-500	7.3	3.9	6.08	5.56
500-575	6.5	5.7	5.17	5.47
575-665	7.9	4.7	5.16	5.88
665-775	9.4	12.9	5.02	5.15
775-915	12.9	9.8	5.10	5.00
915-1120	14.1	16.3	4.47	4.73
1120-1500	16.8	17.1	4.01	4.03
1500-1925	8.9	10.7	3.40	3.65
1925>=	9.0	15.5	2.78	3.24
All classes	100.0	100.0	4.40	4.37

2.16 The break-up of MPCE by item groups based on schedule type 1 & 2 is given in Table 13. Same reference period of 30 days was used for the items like cereals & cereal substitutes, pulses & pulse products, and milk & milk products for collection of data in both schedule types. The expenditure incurred on these items is observed to be somewhat similar according to both the schedule types in both the areas of the State. Whereas, the

expenditure on food items (with different reference periods) like edible oil, eggs, fish & meat, vegetables, fruits and beverages, refreshment and processed foods were significantly different. The expenditure as recorded in schedule type 2 was higher by 26 per cent for edible oil, two and half times higher for eggs, fish & meat, 74 per cent higher for vegetables, 84 per cent higher for fruits and 79 per cent higher for beverages, refreshments and processed foods respectively in the rural areas. The corresponding expenditure on these items was higher by 20 per cent, 69 per cent, 64 per cent, 79 per cent and 55 per cent respectively in the urban areas. The MPCE estimated for non-food item for schedule type 1 & 2 was near about same (i.e. Rs.278 & Rs.289 in rural areas and Rs.675 and Rs.680 for urban areas respectively). The non-food item 'pan, tobacco and intoxicants' for which 7 days reference period was considered the expenditure was higher in schedule type 2 by 91 per cent in rural areas and 64 per cent in urban areas. The MPCE for rural areas was Rs.566 and Rs.679 as per schedule type 1 and 2 respectively; whereas, in the urban areas, the corresponding MPCE was Rs.1120 and Rs. 1265 respectively. Thus the choice of reference period for collection of data plays vital role in estimating the correct consumption expenditure.

2.17   It is observed that in both rural & urban areas, average MPCE calculated on the basis of schedule type 2 data is higher than that on the basis of schedule type 1 data.

Table 13
Value (Rs.0.00) of consumption by broad groups of items per person for a period of 30 days

Item group	Rural		Urban	
	Sch. type 1	Sch. Type 2	Sch. type 1	Sch. Type 2
(1)	(2)	(3)	(4)	(5)
Cereals & cereal substitute	87	88	104	103
Pulses and their products	20	20	26	27
Milk and milk products	32	33	70	78
Edible oil	34	43	44	53
Meat, egg and fish	18	43	29	49
Vegetables	31	54	44	72
Fruits and nuts	19	35	33	59
Sugar	16	16	16	17
Salt and spices	12	24	14	26
Beverages, refreshment & processed food	19	34	65	101
Food total	*288*	*390*	*445*	*585*
Pan, tobacco and intoxicant	11	21	14	23
Fuel and light	62	59	105	109
Clothing & footwear	48	46	75	78
Education	12	10	55	52
Medical	29	42	73	52
Miscellaneous consumer goods	52	50	157	171
Rent	7	7	49	46
Taxes and cesses	7	7	33	38
Durable goods	13	12	33	30
Non-food total	*278*	*289*	*675*	*680*
All	**566**	**679**	**1,120**	**1,265**

2.18   It is interesting to see that the average MPCE based on both the types of schedules shows that the lowest MPCE is observed to be for the ST population in the rural areas. The proportion of ST, SC, OBC and Others population for the state are 8.0 per cent, 15.3 per cent, 29.7 per cent and 47.1 per cent respectively.

Table 14
Average MPCE (Rs.) of households for different social groups

social group	Rural		urban	
	sch. type 1	sch. type 2	sch. type 1	sch. type 2
Scheduled Tribe	447.06	510.05	878.33	1275.80
Scheduled Caste	493.66	588.11	772.12	920.40
Other Backward Class	584.90	729.42	882.86	988.56
Others	632.60	738.85	1312.58	1441.84
All	573.19	686.15	1129.07	1269.63

2.19   It is observed from table 14 that in both rural & urban areas, average MPCE according to schedule type 2 data is more than schedule type 1. In rural area, the lowest average MPCE is Rs.448 and Rs.548 for agricultural labour according to schedule type 1 and 2 respectively, while in urban area the lowest average MPCE was recorded for casual labour at Rs.598 and Rs.650 as per schedules 1 and 2.

Table 15
Average MPCE (Rs.) of households by household type

household type	Rural		household type	Urban	
	sch.type1	sch.type2		sch.type1	sch.type2
self-employed in non agriculture	672.66	700.49	self-employed in non agriculture	1110.71	1376.19
agricultural labour	447.66	548.12	regular wage salary	1202.15	1351.33
other labour	668.67	611.28	casual labour	597.62	650.39
self-employed in agriculture	579.21	735.84	others	1821.60	1005.13
others	860.59	1010.31			
All	573.19	686.15	All	1129.07	1269.63

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GOVERNMENT OF MAHARASHTRA

A REPORT ON
'HOUSEHOLD CONSUMER EXPENDITURE'
BASED ON DATA COLLECTED IN STATE SAMPLE OF
60Th ROUND OF NATIONAL SAMPLE SURVEY
(JANUARY – JUNE, 2004)

VOL.II

**Directorate of Economics and Statistics, Planning Department,
Government of Maharashtra,
Mumbai**

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Note: Hard copy of detailed tables is available at the Directorate of Economics and Statistics, Government of Maharashtra, Mumbai Office.

Chapter – Two

CONCEPTS AND DEFINITIONS

2.0   The concepts and definitions of some important terms used in the survey are explained in the following paragraphs. They are relevant to this report for understanding various estimates on household consumer expenditure.

2.1   **Household**: A group of persons normally living together and taking food from a common kitchen constitutes a household. The word "normally" means that temporary visitors are excluded but temporary stay-aways are included. Thus, a son or daughter residing in a hostel for studies is excluded from the household of his/her parents, but a resident employee or resident domestic servant or paying guest (but not just a tenant in the house) is included in the employer/host's household. "Living together" is usually given more importance than "sharing food from a common kitchen" in drawing the boundaries of a household in case the two criteria are in conflict; however, in the special case of a person taking food with his family but sleeping elsewhere (say, in a shop or a different house) due to space shortage, the household formed by such a person's family members is taken to include the person also. Each inmate of a mess, hotel, boarding and lodging house, hostel, etc. is considered as a single-member household except that a family living in a hotel (say) is considered as one household only; the same applies to residential staff of such establishments.

2.3   **Adult**: A person who has completed 15 years of age.

2.4   **Household size**: The size of a household is the total numbber of persons in the household.

2.5   **Household consumer expenditure**: The expenditure incurred by a household on domestic consumption during the reference period is the household's consumer expenditure. Household consumer expenditure is the total of the monetary values of consumption of various groups of items, namely (i) food, pan (betel leaves), tobacco, intoxicants and fuel & light, (ii) clothing and footwear and (iii) miscellaneous goods and services and durable articles.

2.6   For groups (i) and (ii),the total value of consumption is derived by aggregating the monetary value of goods actually consumed during the reference period. An item of clothing and footwear would be considered to have been consumed if it is brought into maiden or first use during the reference period. The consumption may be out of (a) purchases made in cash or credit during the reference period or earlier; (b) home-grown stock; (c) receipts in exchange of goods and services; (d) any other receipt like gift, charity, borrowing and (e) free collection. Home produce is evaluated at the ex-farm or ex-factory rate. For evaluating the consumption of the items of group (iii), i.e., items categorised as miscellaneous goods and services and durable articles, a different approach is followed. In this case, the expenditure made during the reference period for the purchase or acquisition of goods and services is considered as consumption.

2.7　**Monthly per capita consumer expenditure (MPCE):**　For a household, this is the total consumer expenditure over all items divided by its size and expressed on a per month (30 days) basis. A person's MPCE is understood as that of the household to which he or she belongs.

2.8　**Scheduled Type:**　In this round, two different types of Schedule 1.0 were canvassed in two matched samples of households. This decision was based on the recommendations of a 'Pilot Survey on Suitability of Different Reference Periods for Measuring Household Consumption (January - June 2000)'. The Expert Group which had carried out the pilot survey had concluded that for items of food coming under the categories of edible oil,egg,fish and meat, vegetables, fruits, spices, beverages and processed food, as well as for pan, tobacco and intoxicants, a 7-day reference period was more suitable that a 30-day reference period. Accordingly,when the 60th round survey was planned, it was decided that a reference period of "last 7 days" would be used for these items. The pilot survey had also shown that the "last 7 days" reference period would yield significantly higher estimates of consumption of these items categories. This, it was realized, would pose problems of comparison of data of the 60th round with those of past rounds. Therefore, it was decided that the sample households of the 60th round would be divided into two matched sets. In one set, data for all items of food, as well as pan, tobacco and intoxicants, would be collected with a reference period of 30 days, in line with the practice of past rounds. The schedule used for this set of households would be called Scheduled Type 1. The other schedule - called Scheduled Type 2 - would be as recommended by the Expert Group. In other words, it would use a 7-day reference period for the items mentioned earlier. The estimates of consumption of items generated from the two schedule types would be used to build up adjustment factors for comparing the 60th round estimates with those of earlier rounds. Thus, the 60th round employs two variants of Schedule 1.0. Note that the two schedule types differ only in respect of reference period for collection of data on the items mentioned earlier. In all other respects, they are identical.

2.9　**Reference periods:**　The reference periods used for collection of consumption data for different groups of items are given below:

Srl. No.	Items	Reference period for	
		Schedule Type 1	Schedule Type 2
1	education, medical care (institutional), clothing, bedding, footwear and durable goods	last 365 days	last 365 days
2	edible oil, egg, fish and meat, vegetables, fruits, spices, beverages and processed foods and pan, tobacco and intoxicants	last 30 days	last 7 days
3	all other items (viz. all food except those mentioned against Srl. No.2), fuel and light, miscellaneous goods and services including non-institutional medical care, rents and taxes	last 30 days	last 30 days

2.10   **Milk and milk products:** This includes ghee,butter, curd, ice-cream etc. Milk-based sweetmeats (pera, rasogolla etc.) come under the item "prepared sweets". However, if these are prepared from milk, sugar, etc. within the household and consumed, then the consumption of each ingredient is accounted separately instead of the entire consumption being accounted under "milk products".

2.11   **Clothing and footwear:** This category includes bedsheets, bedcovers, pillows, curtains, mattresses, blankets, rugs, mats and mattings, cotton yarn, wool, and knitting wool.   It, however, excludes tailoring charges, which come under "miscellaneous goods and services".

2.12   **Durable goods**: Items included here are distinguished from other miscellaneous goods by having a longer expected lifetime of use (roughly, one year or more). Expenditure incurred on repairs, and purchase and construction of durables used for domestic purpose is included in "expenditure on durable goods".

2.13   **Miscellaneous goods and services:** This is a residual group containing items other than food, pan, tobacco, intoxicants, fuel and light, clothing, footwear, rent, taxes and durable goods.

2.14   **Literacy rate**: Lieracy rate of 7+ population is the percentage of people whose ages are 7 years and above and who can both read and write a simple message with understanding in at least one language.

2.15   **Katcha:** A katcha structure is one whose walls and roof are made of katcha materials, which means materials such as mud, bamboo, grass, leaves, reeds, thatch or unburnt bricks, etc.

2.16   **Pucca**: A pucca structure is one whose walls and roof are made of pucca materials,which means materials such as burnt bricks, stone, cement, concrete, jackbaord (cement-plastered reeds) and timber. Tiles, galvanised tin or asbestos cement sheets used in construction of roofs are also regarded as pucca materials.

2.17   **Semi-pucca**: A semi-pucca structure is one where pucca materials are used for either the roof or the walls but not both.

2.18   **Independent house**: An independent house is one which has a separate structure and entrance   with self-contained arrangements. In other words, if the dwelling unit and the entire structure of the house are physically the same, it is considered as an independent house.   Here dwelling unit means   living rooms, kitchen, bathroom, latrine, store-room and verandah (both open and closed).

2.19   **Flat:** A flat, generally, is a part of a building and has one or more rooms with self-contained arrangements and normal housing facilities like water supply, latrine, toilet etc., which are used exclusively by the family residing therein or jointly with other families. It also includes detached room or rooms which may or may not have other housing facilities.

Chapter – Three

SAMPLE DESIGN AND ESTIMATION PROCEDURE

3.0   Sample design

3.1   Outline of sample design: A stratified multi-stage design had been adopted for the 60th round survey. The first stage units (FSU) were the 1991 census villages in the rural sector and Urban Frame Survey (UFS) blocks in the urban sector. The ultimate stage units (USU) were households in both the sectors. In case of large villages/blocks requiring hamlet-group (hg/sub-block (sb) formation, one intermediate stage was the selection of two hgs/sbs from each FSU.

3.2   Sampling Frame for first-stage units: For the rural sector, the list of Census 1991 villages constituted the sampling frame. For the urban sector, the list of latest available Urban Frame Survey   (UFS) blocks had been considered as the sampling frame.

3.3   Stratification

3.3.1   Rural Sector : Two **special strata** were formed at the State level, viz.

Stratum 1:   all FSUs with population between 0 to 50, and
Stratum 2:   FSUs with population more than 15,000 as per census 1991.

Special stratum 1 had been formed if at least 50 such FSUs were found in a State. Similarly, special stratum 2 had been formed if at least 4 such FSUs were found in a State. Otherwise, such FSUs were merged with the general strata.

From FSUs other than those covered under special strata 1 & 2, general strata were formed and their numbering started from 3. Each district of a State was normally treated as a separate stratum. However, if the census rural population of the district was greater than or equal to 2.5 million as per Population Census 2001 or 2 million as per Population Census 1991, the district had been split into two or more strata, by grouping contiguous tehsils to form strata.

3.3.2   Urban sector: In the urban sector,strata were formed within each NSS region on the basis of size class of towns as per Population Census 2001. The stratum numbers and their composition (within each region) are given below.

stratum 1:   all towns with population   less than 50,000
stratum 2:   all towns with population   50,000 or more but less   than 2 lakhs
stratum 3:   all towns with population   2 lakhs or more but less than 10 lakhs
stratum 4,5,6.: each town with population 10 lakhs or more

The stratum numbers had been kept as above even if, in some regions, some of the strata were not formed.

3.4   **Allocation of State level sample to rural and urban sectors:**   State level sample had been allocated between two sectors in proportion to provisional population as per Census 2001 with 1.5 weightage to urban sector subject to the restriction that urban sample size for bigger states like Maharashtra, Tamil Nadu etc. would not exceed the rural sample size. Earlier practice of giving double weightage to urban sector was modified considering the fact that there had been considerable growth in urban population. A minimum of 8 FSUs was allocated to each State separately for rural and urban areas.

3.5   **Allocation to strata**: Within each sector of a State, the respective sample size had been allocated to the different strata in proportion to the stratum population as per Census 2001. Allocations at stratum level were adjusted to a multiple of 4 with a minimum sample size of 4.

3.6   **Selection of FSUs**:   FSUs were selected with Probability Proportional to Size With Replacement (PPSWR), size being the population as per Population Census 1991 in all the strata for rural sector except for stratum 1. In stratum 1 of rural sector and in all the strata of the urban sector, selection was done using Simple Random Sampling Without Replacement (SRSWOR). Within each stratum, samples had been drawn in the form of two independent sub-samples in both rural and urban sectors.

3.7   **Criterion for hamlet-group/sub-block formation:** Large villages / blocks having approximate population of 1200 or more were divided into a suitable number (denoted D)of 'hamlet-groups' in the rural sector and 'sub-blocks' in the urban sector as stated below.

approximate present population of the sample village/block	no. of hamlet groups/sub-blocks to be formed (D)
less than 1200	1 (no hg's/sb's formation)
1200 to 1799	3
1800 to 2399	4
2400 to 2999	5
3000 to 3599	6
... and so on	

Two hamlet-groups/sub-blocks were selected from a large village/UFS block, wherever hamlet-groups/sub-blocks were formed, by SRSWOR. Listing and selection of the households were done independently in the two selected hamlet-grouls/sub-blocks.

4.0   **Formation of Second Stage Strata and allocation of households and scheduled types (for Sch.1.0):**

4.1   All the households in the selected village/block/hamlet-groups/sub-blocks were stratified into two second stage strata (SSS) on the basis of land possessed by household in rural areas and household MPCE in urban areas. For rural sector, a cut-off point 'X' (in hectares) was determined at State level from NSS 48th round data in such a way that top 20% of the rural households possessed land equal to or more than X. All the listed households possessing land less than X were in SSS 1. Rest of the households were in SSS 2. Similarly, in the urban sector, a cut-off point 'A' (in Rs)

had been determined at State level from NSS 55th round data in such a way that top 20% of the households had MPCE equal to or more than 'A'. All the listed households with MPCE less than 'A' were in SSS 1 while the rest of the households were in SSS2.

Composition of SSS with number of households to be surveyed for Schedule 1.0 were as follows:

SSS	Composition of SSS	Number of households to be surveyed for schedule 1.0	
		without hg/sb formation	with hg/sb formation (for each hg/sb)
rural			
SSS 1	households with land possessed < X	2	1
SSS 2	other households	2	1
Urban			
SSS 1	households with MPCE < A	2	1
SSS 2	other households	2	1

4.2   Both Schedule Type 1 and Schedule Type 2 had been canvassed in each FSU.

For FSUs without hg/sb formation: In this case, one each for both schedule types (one type 1 and one type 2) was canvassed in each SSS. Type 1 schedule was canvassed in the odd numbered sample household and type 2 was canvassed in the even numbered sample household. If after compensation of shortfall, there were 3 selected households in SSS 1 (or in SSS 2) and 1 household in SSS 2 (or in SSS 1) then type 1 was canvassed in sample households 1 and 3 of SSS1 (or SSS 2) and type 2 was canvassed in the remaining sample households of both the SSS. If all 4 households belonged to the same SSS, type 1 was assigned to odd numbered sample households and rest to type 2.

For FSUs with hg/sb formation: Here Schededule Type 1 was canvassed in SSS 1 of hg/sb 1 and SSS   2 of hg/sb 2 while Type 2 was canvassed in SSS 2 of hg/sb 1 and SSS 1 of hg/sb 2. If one SSS of a hg/sb was void, allocation was done following the compensation rule and corresponding allocation of schedule type (type 1/type 2) was transferred to the SSS of the hg/sb having more than 1 sample household. If each hg/sb had one SSS void, type 1 was allocated to the odd numbered sample households of each remaining hg/sb by SSS and type 2 to the even numbered sample households.

4.3   **Selection of households:**   From each SSS the sample households were selected by SRSWOR.

5.0   Estimation Procedure

Procedure followed for obtaining estimates of aggregates, ratios is briefly indicated below

5.1   Notations:

s = subscript for s-th stratum
m = subscript for sub-sample (m=1,2)
i = subscript for i-th FSU [village (panchayat ward)/block]
d = subscript for a hamlet-group/sub-block (d= 1,2)
j = subscript for j-th second stage stratum in an FSU/hg/sb
k = subscript for k-th sample   household under a particular second stage stratum within an
        FSU/hg/sb
D = total number of h-g's/s-b's formed in the sample village(panchayt ward)/block
D* = 1 if D =1
   = D÷2 for FSUs with D > 1
N = total number of FSUs in rural stratum 1 or in any urban stratum
Z = total size of a rural stratum other than stratum 1 (= sum of sizes for all the FSUs of a rural stratum
        other than stratum 1)
z = size of sample village used for selection
n = number of sample village/block surveyed including zero cases but excluding casualty for a particular
        sub-sample and stratum
H = total number of households listed in a second-stage stratum of a hamlet-group/sub-block of sample FSU
h = number of households surveyed in a second-stage stratum of a hamlet-group/sub-block of sample
        FSU
x,y = observed value of characteristics x,y under estimation
X,Y = estimate of population total X,Y for the characteristics x,y

Under the above symbols,
y_{smidjk}= observed value of the characteristic y for the k-th household in the j-th second stage stratum of the d-th hg/sb (d = 1, 2) of the i-th FSU belonging to the m-th sub-sample for the s-th stratum;

However, for ease of understanding, a few symbols have been suppressed in following paragraphs where they are obvious.

5.2   Estimation of aggregates for a particular sub-sample (m) and stratum (s) in rural/urban sector:

5.2.2 Schedule 1.0:

Rural:
(a) Estimation formula for stratum 1:

    (i) For households selected in j-th second stage stratum:

$$\hat{Y}j = \frac{N}{nj} \sum_{i=1}^{nj} D_i^* \left[\frac{Hi1j}{hi1j} \sum_{k=1}^{hi1j} y_{i1jk} + \frac{Hi2j}{hi2j} \sum_{k=1}^{hi2j} y_{i2jk} \right] ; j=1,2.$$

(ii) For all selected households:

$$\hat{Y} = \sum_j \hat{Y}_j$$

b) Estimation formula for other strata:

(i) For households selected in j-th second stage stratum:

$$\hat{Y}_j = \frac{Z}{n_j} \sum_{i=1}^{n_j} \frac{1}{z_i} D_i^* \left[\frac{Hi1j}{hi1j} \sum_{k=1}^{hi1j} y_{i1jk} + \frac{Hi2j}{hi2j} \sum_{k=1}^{hi2j} y_{i2jk} \right]$$

(ii) For all selected households:

$$\hat{Y} = \sum_j \hat{Y}_j$$

Urban:

(a) Estimation formula for a stratum:

(i) For households selected in j-th second stage stratum:

$$\hat{Y}_j = \frac{N}{n_j} \sum_{i=1}^{n_j} D_i^* \left[\frac{Hi1j}{hi1j} \sum_{k=1}^{hi1j} y_{i1jk} + \frac{Hi2j}{hi2j} \sum_{k=1}^{hi2j} y_{i2jk} \right]$$

ii) For all selected households:

$$\hat{Y} = \sum_j \hat{Y}_j$$

Note: Values of j for sch. 1.0, j = 1 or 2

5.3   **Overall Estimate for Aggregates for a stratum:**

Overall estimate for aggregates for a stratum ($\hat{Y}_s$) based on two sub-samples is obtained as:

$$\hat{Y}_s = \frac{1}{2} \sum_{m=1}^{2} \hat{Y}_{sm}$$

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4.4　Overall Estimate of Aggregates at State level:

The overall estimate $\hat{Y}$ at the State level is obtained by summing the stratum estimates $\hat{Y}_s$ over all strata belonging to the State.

4.5　Estimates of Ratios:

Let Y and X be the overall estimate of the aggregates Y and X for two characteristics y and x respectively at the State level.

Then the combined ratio estimate (R) of the ratio ($R = \dfrac{Y}{X}$) is obtained as

$$\hat{R} = \frac{\hat{Y}}{\hat{X}}$$

--x--