A PRELIMINARY NOTE ON THE CONSUMPTION OF CEREALS IN INDIA*

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INTRODUCTION

There has been a good deal of difference of opinion about the actual level of consumption of cereals in India, especially since the National Sample Survey[1] (NSS) started making estimates of per capita consumption about ten years ago. The estimates of aggregate consumption were obtained by multiplying the total population by the per capita consumption; and such estimates were found to be consistently much higher than the estimates of production of the Ministry of Food and Agriculture which were based essentially on the so-called 'complete enumeration' of the area sown by *patwaris* (employees of the Revenue Department) at the village level. The NSS estimates based on per capita consumption have been consistently higher by something of the order of twenty-five per cent or more. It is pertinent to mention that traditional estimates, based on complete enumeration, when checked by sample surveys or compared with other independent estimates, have shown similar underestimation even in the U.S.A.; and a similar gap in Japan was reported in a paper presented last year (1960) at the Tokyo Session of this Institute.[2]

2. Aggregate estimates of consumption based on per capita consumption involve the use of the estimate of total population. In India the estimate of population based on the Census of this year (1961) is now available; it is, therefore, possible to calculate the aggregate consumption based on the Census figure. Very recently, the National Sample Survey has obtained independent estimates of production of cereals for India as a whole based on sample surveys, by direct physical observation of the area sown in sample plots of land, and estimates of yield per acre based on direct crop-cutting experiments using probability samples. Also, as a design of 'inter-penetrating network of samples' (IPNS) is used in the NSS, at least two independent estimates are available; and the difference between the two estimates supplies the margin of uncertainty which can be used for statistical comparisons in a valid manner.

3. In the present note a preliminary examination has been made of the NSS data on consumption of cereals in India in the 8th round (July 1954–March 1955) and the 13th round (September 1957–May 1958). These two rounds have been selected because there was a large increase in prices and especially in the price of cereals during the interval of about three years. Using the period of survey of the 8th round as the base (= 100), the general index of prices[3] rose to 112 during the period of survey of the 13th round; the corresponding index number of the price of cereals was 136 and that of rice 145.

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1 The National Sample Survey of India was started in 1950 and is being conducted since then in the form of successive rounds covering the whole of India. A multi-stage stratified design with inter-penetrating network of sub-samples (IPNS) has been used from the very beginning. The 17th round of the survey was started in July 1961.

2 Y. Tumura : Role of Census in Countries Conducting Various Special Surveys. *Bulletin of the International Statistical Institute*, 38, Part 2, Tokyo, 1961.

3 Index number of wholesale prices in India (Revised Series) : Issued by the office of the Economic Adviser to the Government of India.

4. The comparison of prices, expenditure and consumption of cereals in these two rounds gives a remarkably coherent picture. Using the results of this comparative study, estimates have also been made of the aggregate consumption of cereals with the help of the population figures based on the Census of 1961. Finally, the aggregate estimates of consumption have been compared, in a rough way, with completely independent estimates of production based on direct sample surveys of both area sown and of yield per acre conducted by the NSS.

FRACTILE GRAPHICAL ANALYSIS

5. The method of Fractile Graphical Analysis[4] (FGA) has been used for the comparison of the NSS consumption data. Two independent sub-samples of the data collected by the Central Government, called sub-samples 1 and 2, and the combined sample (obtained by pooling the two sub-samples) were used throughout. In each sub-sample the households were ranked in ascending order of the aggregate expenditure on all consumption goods and services in rupees[5] per person per 30 days; and the sample households (or rather the households corresponding to the estimated population) were divided into twenty *equal* fractile groups of 5 per cent each. The average expenditure, the expenditure on cereals, the price of cereals, the consumption of cereals etc., were then calculated separately for each fractile group for each of the two sub-samples and the combined sample as a whole; these estimates are shown separately for the two sub-samples and the combined sample and for rural and urban areas separately for the 8th and the 13th rounds in the accompanying Tables 1 to 8. The design of the sample surveys is given in Appendix 1; and Notes on Tables 1 to 8 in Appendix 2.

6. A graphical analysis is particularly convenient with such material as will be easily appreciated from the accompanying charts. The x-axis has been used to represent the percentiles of 'per capita consumer expenditure in rupees per 30 days'; this supplies a rough but convenient ranking order of increasing level of consumption which would also (especially in India) correspond approximately to an increasing level of household income. The y-axis represents the other variates such as aggregate consumption, expenditure on cereals, price of cereals, consumption of cereals, etc., as the case may be. The construction is simple. The value of y is plotted for each of the twenty (five-per-cent) fractile groups corresponding respectively to the position of each fractile group on the x-axis for the first sample; successive points of y are then joined by straight lines and supply the graph for sub-sample 1; graphs for sub-sample 2 and the combined sample are drawn in exactly the same way; finally the area included between the graphs for the two sub-samples is hatched to show the "error" (in the sense of FGA) associated with the combined graph. These FGA graphs, if drawn on translucent paper, can be superimposed for rapid comparison. Such comparisons can also be made by printing each set of 3 graphs (for two sub-samples and the combined sample) in a different colour. In the accompanying charts, green has been used for all graphs for the 8th round rural areas and blue for the 8th round urban areas; in the same way, red and orange have been used for the 13th round rural and urban areas respectively.

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[4] A general account of the FGA method was given in *Econometrica*, Vol. 28, 2 (April 1960) and reprinted in *Sankhyā*, Series A, Vol. 23, 1 (1961) with other articles on the subject.

[5] One rupee = 1 shilling 6 pence or 21 US cent or one new French franc approximately.

Comparison of consumption data

7. The great advantage of FGA is that the distribution over the whole range of per capita household expenditure or (approximately) household income can be appreciated at a glance. Also, comparisons can be made for the same fractile group (0–5, 5–10, 10–15, etc.) between rural and urban areas or directly between the 8th and the 13th rounds irrespective of the large change in prices. The area lying between the two graphs for any two combined samples shows the generalized difference or separation between the two combined samples; if this 'separation area' is appreciably greater than the two corresponding (hatched) error areas' then the difference or separation may be considered to be statistically significant; otherwise, not. In this method each fractile group supplies the basic statistical unit or element for comparisons. It is also possible to make comparisons for the same per capita consumer expenditure in terms of money; such comparisons however, would be meaningful only for comparisons between rural and urban areas in the same round.

8. *Aggregate consumption expenditure :* Charts (1.1)-(1.2) (and Table 1) show the aggregate expenditure on all consumer goods and services in rupees per person with increasing per capita expenditure, that is, with rising income. The expenditure in terms of rupees is appreciably higher in the 13th round in rural areas; but the change in the urban area is not significant because of the large margin of uncertainty of the graph for the 8th round urban areas.[6] The distribution of household expenditure (or of income) is highly concentrated.

9. *Expenditure on cereals :* Table 3 and Charts (1.3)-(1.4) show the expenditure on cereals[7] in rupees per person per 30 days. This has naturally increased because of the rise in the price of cereals in the 13th round; the shift was higher in rural areas.

10. *Price of cereals :* Table 4 and Charts (3.1)-(3.2) show the data for the price of cereals in rupees per seer.[8] The price clearly increases with increasing household expenditure or income in each round in both rural and urban areas. The price paid for cereals was higher in the 13th round; but the pattern of change with rising household income remained the same in the two rounds.

11. *Proportion of rice in total cereals :* The increase in the price paid per seer of cereals by higher income groups is due to the change in the composition of each unit of cereals consumed by them. The price of rice in India is usually higher than that of other cereals; the higher the proportion of rice, higher would be the total price paid per seer of cereals. Table 5 and Charts (5.1)-(5.2) show relevant data. It would be seen that the proportion of rice increases generally with rising household income. (It is necessary to point out, however, that the figures given here are all-India averages; the higher proportion of rice does not therefore necessarily refer to individual households but may, and, no doubt, is due to a large extent to rice being the staple food in certain regions of the country; with rising household income, a greater proportion of rice may also occur in the consumption in other regions as rice is usually something of a luxury in regions outside the rice area.) It is of interest to note that the increase in the proportion of rice with rising income was somewhat lower in the 13th round.

[6] The margin of uncertainty is suspiciously large. It is quite possible that gross errors have come in either at the stage of collection or of statistical processing of the data.

[7] Cereals include rice, wheat, maize, barley, small millets, *jowar, bajra, ragi* and also processed food from such cereals (pressed rice, puffed rice, etc.).

[8] One seer = 2.057 lbs. or 0.933 kg. approximately.

12. *Price of rice in rupees per seer :* Table 6 and Charts (5.3)-(5.4) give the price of rice in rupees per seer. It would be seen that the price of rice increased very much in the 13th round. This immediately explains the somewhat lower increase in the proportion of rice with rising income in this round, which has been noted in the previous paragraph.

13. *Percentage increase in the price of cereals and of rice :* The percentage increase in the price of cereals and of rice is shown in Appendix 3 and Charts (3.3)-(3.4). The increase in the price of cereals was of the order of 40 or 50 per cent for the lower income groups. An increase in the price of cereals bears very heavily on the poorer people of India; and it is of great importance to prevent this.

14. *Consumption of cereals in seers per person per 30 days :* Table 7 and Charts (6.1)-(6.2) and (7.1)-(7.4) show the actual per capita consumption of cereals. In spite of the very large increase in price it is quite remarkable that the per capita consumption of cereals seems to have remained steady in both the 8th and the 13th rounds. The pattern of change with rising household income also remains the same in the two rounds.

15. In both rural and urban areas there is a comparatively sharp rise in consumption with rising income in the bottom 20 or 25 per cent of the population in both the rounds. In urban areas the per capita consumption tends to level off, owing most probably to the availability of other items of food. In the rural areas, on the other hand, the consumption continues to increase. It is possible that a part of the cereals is used as cattle and animal feeds.[9] In rural areas the higher income groups would be mostly well to do farmers with their own land; farmers with higher income would also usually have a larger number of cattle and the amount of cereals used as cattle feed may also be higher.

16. *Summary :* The comparison of data on consumption of cereals in the 8th and the 13th rounds reveals a coherent and reasonable picture of the situation. The general index of wholesale prices rose in the 13th round to 112 with prices in the 8th round as base (= 100); and the index of the price of cereals rose to 136 and of rice to 145. The index number of the retail price of cereals paid by the sample households rose to 136 in rural and 123 in urban areas; the rise in the retail price of rice was higher and the index number in rural areas rose to 140 and in urban areas to 129. Naturally, aggregate expenditure on all consumer goods and services as well as expenditure on cereals also increased appreciably in the 13th round. Higher prices per seer (unit quantity) of cereals were paid by households with higher income in both rural and urban areas, and the pattern (relation of price paid for cereals and household income) was same or similar in both the rounds. Such higher prices were paid because of the change in composition of unit quantity of cereals, for example, with a higher proportion of rice of higher price or of higher quality of cereals; this is further corroborated by the fact that the price of rice having risen very high, the rice component increased to a smaller extent in the 13th round with increasing household income.

17. In spite of such large changes in price, the quantity of cereals consumed remained remarkably steady in the two rounds. The quantity consumed, however, increased sharply in the bottom 20 or 25 per cent of the population in both urban and rural areas in both the rounds indicating that one-fifth of the population of India could not probably afford to eat as much cereals as they would like to. In urban areas the consumption gradually levelled off but in rural areas it continued to rise with increasing household income; this might

[9] Due to ascertainment difficulties there is possibility of this happening in spite of instructions to the contrary.

be partly due to greater use of cereals for animal feeds by the more prosperous farmers. The pattern of change of consumption (as well as the quantity consumed) was the same or very similar in both the rounds. There is clearly income elasticity of quantity consumption of cereals throughout the whole range of household income in rural areas, and up to perhaps a third of the population in urban areas after which the consumption levels off. The pattern of income elasticity appears to be the same or very similar in both the rounds in spite of the large increase in the price of cereals; for cereals as a whole there is thus no evidence of price elasticity at the national level.[10]

18. It is worth emphasizing that the data for the two rounds were obtained with an interval of more than three years between the two rounds, from entirely different sets of villages, and different sample households, by different groups of investigators, working independently in the two inter-penetrating network of sub-samples covering the whole country, and that many of the investigators had also changed during the interval.

Aggregate consumption of cereals

19. It seems reasonable to assume that the per capita consumption of cereals remained steady at the level of about 17.10 seers or 15.95 kg. per 30 days with two sub-sample estimates of 17.31 and 16.90 seers respectively for the country as a whole as observed in the 13th round. It would be therefore reasonable to multiply the per capita consumption by the total population to obtain the aggregate consumption of cereals during any given period. Such estimates have been calculated for the two years 1958-59 and 1959-60 in the following way. The weighted average of the per capita consumption of cereals for rural and urban areas taken together, based on 1951 Census weights of 0.827 for rural areas and 0.173 for urban areas, is easily obtained[11] as 0.1910 ton per year for the combined sample of the 13th round, with corresponding sub-sample estimates of 0.1934 and 0.1888 ton per year.[12] The estimated population for the years 1958-59 and 1959-60 has been taken as 420 and 428 million respectively, based on the population estimate of 438 according to the Census of March, 1961. Multiplying the estimates of per capita consumption by these population figures, the aggregate consumption of cereals in 1958-59 and 1959-60 come out as 80.2 and 81.7 million tons respectively with a margin of uncertainty of about 2 million tons.

Comparison between consumption and production

20. *Estimates of production :* As already mentioned, the National Sample Survey has recently started making estimates of the production of seven cereal crops (rice, wheat, barley, maize, *jowar*, *bajra* and *ragi*) for India as a whole through direct physical observation by investigators of the area sown, and by direct crop-cutting experiments for estimating the rate of yield per acre. The estimated production was 82.28 million tons of the seven cereals mentioned above in 1958-59 and 83.86 million tons in 1959-60 with a margin of uncertainty

[10] There is, however, some evidence to suggest that the consumption of rice tended to be relatively somewhat lower in the 13th round indicating the presence of price elasticity of some kind.

[11] By multiplying the figures in seers per 30 days by the conversion factor 0.01117 to convert into ton per year.

[12] If the 1961 Census weights of .822 for rural areas and .178 for urban areas are used then these estimates would be changed to .1931, .1885, and .1908 tons per year for the two sub-samples and the combined sample respectively.

of two or three million tons.[14] These estimates of production are, however, not directly comparable with the estimates of aggregate consumption as the former included, but the latter excluded, the cereals used as seeds. It is possible from data collected by the National Sample Survey to estimate the seed requirements which came to about 7 per cent of the total production; relevant figures and references are given in Appendix 4.

21. Also, the production data excluded small millets and gram while the consumption data included these two items. From the consumption data collected in the 13th round it is found that the weighted average per capita consumption was 0.441 seers of small millets and 0.698 seers of grams per 30 days;[14] multiplied by the population figures of 420 and 428 millions respectively, the aggregate consumption would come to 2.07 and 2.11 million tons of small millets in 1958-59 and 1959-60 respectively, and 3.28 and 3.34 million tons of gram respectively in the same two years. The estimates of production, given by the Ministry of Food and Agriculture, were 2.07 and 2.01 million tons of small millets and 6.88 and 5.39 million tons of gram in these two years respectively. The agreement in the case of millets is satisfactory. Also, it is well known that only a part of the total production of gram is used for human consumption, the remaining part being used for animal feeds and other purposes : the NSS estimates indicate that roughly half of the production of gram (as given by the Ministry of Food and Agriculture) is used for human consumption and the other half for animal feeds and other purposes. Also, excluding the consumption of millets and grams from the NSS estimates of consumption of cereals, comparable estimates of consumption of cereals would come to 79.9 and 76.3 million tons in 1958-59 and 1959-60 respectively.

22. Deduction of 7 per cent for seed requirements would reduce the NSS estimate of the production of cereals available for consumption to something like 76.52 million tons in 1958-59 and 77.99 million tons in 1959-60. It is, however, necessary to make further adjustments which are more intangible. On one side, the addition of imported cereals to the domestic production and, on the other side, losses in storage and transportation and use for other purposes such as industry or animal feeds, and changes in stocks. There are great difficulties in making precise comparisons because a good part of the crop production in one year is carried over to the next year; and also because the release of cereals out of imported stock varies a great deal from season to season. The addition to the availability of cereals in 1958-59 and 1959-60 was probably something of the order of 3.5 and 4.0 million tons respectively;[15] the total availability (after deduction of 7 per cent for seed requirements) would thus come to something like 80.0 million tons in 1958-59 and 82.0 million tons in 1959-60 against roughly 74.9 and 76.3 million tons of consumption in these two years. This leaves a balance of roughly four and a half million tons to offset losses in transport and storage, industrial use and cattle feeds, and changes in stocks.

23. It is possible to check the above calculations in a different way by accepting the over-all rate of deduction of 12½ per cent (for requirements of seeds, losses in storage and transport, animal feeds, etc.) used by the Ministry of Food and Agriculture to obtain

[13] The size of the sample was comparatively small and covered only about 15,000 clusters of plots of land (selected with equal probability in a systematic manner with a random start), in about 2500 villages selected with equal probability in each of the three crop seasons (autumn, winter and spring). A ratio method was used for estimation. The two sub-sample estimates were 84.12 and 84.52 million tons respectively in 1958-59 and 86.25 and 86.92 million tons in 1959-60, but the estimates based on the combined samples give lower values of 82.28 and 83.86 million tons in the two years respectively ; the margin of uncertainty may thus be of the order of 2 or even 3 million tons.

[14] Or, 0.00492 ton per year of small millets and 0.00780 ton per year of grams per person.

[15] The import of cereals was 3.17, 3.81, and 5.06 million tons during the calendar years 1958, 1959 and 1960 respectively ; the agricultural crop year however extends from July to June.

the quantity of cereals available for human consumption. On this basis, the estimate of production of cereals available for consumption would be something like 72.00 million tons in 1958-59 and 73.38 million tons in 1959-60. Adding about 3.5 and 4.0 million tons of cereals which might have been released out of imported cereals, the total quantity available for human consumption would thus come to something like 75.5 million tons in 1958-59 and 77.4 million tons in 1959-60, against an aggregate consumption of 74.9 and 76.3 million tons respectively.

General appreciation

24. The present comparison between aggregate consumption and aggregate production of cereals in India for 1958-59 and 1959-60 is, necessarily, somewhat rough and approximate. Firstly, there is a lag between consumption and production; a good part of the cereals produced in one crop year is consumed in subsequent years; the quantity carried over depends on the level of production, stocks and prices; it would be possible to examine the general position more adequately only when data for a number of years become available. Secondly, the release from stocks of imported cereals varies widely from month to month; a good deal of detailed information requires to be collected to estimate the actual contribution to the supply effected in any given year. Thirdly, it is extremely difficult, if not impossible, to make direct estimates of the losses which occur in transport and storage. Finally, the present NSS estimates are based on extremely small samples; the number of sample households used for the consumption survey, in each sub-sample, was less than 1200 in Round 8 and less than 1000 in Round 13 out of a total, roughly, of 85 or 90 million households in India; the number of villages covered for the production survey, in each sub-sample, in each crop season, was 1250, out of roughly 560,000 villages in the country; the margin of uncertainty (inclusive of sampling and non-sampling errors, and bias) may be of the order of two million tons or a little more.

25. It is still possible to make a general appreciation of the position keeping the above observations in mind. If deductions are made only for requirements of seeds, it has been found that there is a gap of five or five-and-a-half million tons to offset the use of cereals for animal feeds, industrial purposes, losses in transport and storage, and changes in stocks; this is not unrealistic. Also, if a deduction is made at the over-all rate of 12½ per cent of the production, according to the procedure used by the Ministry of Food and Agriculture, the difference between estimates of production and consumption of cereals is found to be of the order of one million ton; this is well within the margin of uncertainty. The National Sample Survey estimates of aggregate production and aggregate consumption of cereals in India, obtained by two entirely different and independent surveys, would thus seem to have been in reasonable agreement in 1958-59 and 1959-60.

References

Kawada, Y. (1961): Some remarks concerning the expectation of the error area in fractile analysis. *Sankhyā*, Series A, 23, 2, 155–160.

Mahalanobis, P. C. (1958): A method of fractile graphical analysis with some surmises of results. *Transactions of the Bose Research Institute*, XXII, 1958, 223–230.

———————— (1960): A method of fractile graphical analysis. *Econometrica*, 28, 2, 325-351.

Mitrofanova, N. M. (1961): On some problems of fractile graphical analysis. *Sankhyā*, Series A, 23, 2, 145–154.

Parthasarathy, K. R. and Bhattacharyya, P. K. (1961): Some limit theorems in regression theory. *Sankhyā*, Series A, 23, 1. 91–102.

Sethuraman, J. (1961): Some limit distributions connected with fractile graphical analysis. *Sankhyā*, Series A, 23, 1, 79–90.

Takeuchi, K. (1961): On some properties of error area in the fractile graph method. *Sankhyā*, Series A, 23, 1, 65–78.

Appendix 1 : Sample design for consumption data

1. Data on consumer expenditure for the different rounds of the NSS were collected by the interview method from sample households selected according to usual procedures of probability sampling. Briefly, the sample design for the different rounds were as follows :—

Rural, Rounds 8 and 13 : The design was stratified, multi-stage, interpenetrating samples. In each stratum the first stage units of sampling were villages (rural units, selected with probability proportional to 1951 populations), and the second stage units were households (selected with equal probability).

Urban, Rounds 8 and 13 : The design was stratified, multi-stage, interpenetrating samples. Each big city (Calcutta, Bombay, Delhi and Madras in Round 8, and each city with a population of 3,00,000 and above as per 1951 census in Round 13) constituted a stratum; in each stratum a two-stage design was used with blocks as first stage units and households within blocks as second stage units. Remaining cities and towns were grouped on geographical considerations to constitute strata; in each stratum in both rounds, a three-stage design was used with cities or towns, blocks and households as first, second and third stage units of sampling respectively.

2. As the sample households had different probabilities of being included in the sample for purposes of estimation, it was necessary to use appropriate multipliers. For the purpose of this paper, however, sub-samples of households were selected in such a way from sample households as to become self-weighting. The number of sample villages and blocks in Tables 1 to 8 have been shown within brackets to indicate that the estimates for the items concerned are based on such sub-samples of households. The number of sample villages/blocks and number of sample households analysed separately by rounds are as follows.

	rural			urban		
	s.s.1	s.s.2	combined	s.s.1	s.s.2	combined
			sample villages/blocks			
Round 8 :	353	353	706	238	228	466
Round 13 :	462	462	924	585	583	1168
			sample households			
Round 8 :	931	938	1869	224	223	447
Round 13 :	728	738	1466	237	252	489

Appendix 2 : Notes on Tables 1 to 8

1. The reference period adopted for collection of data was a period of 30 days ending on the day preceding the day of enquiry. Since the field operations of Rounds 8 and 13 extended from July 1954 to March 1955 and from September 1957 to May 1958 respectively, the estimates, as presented, broadly refer to the period from June 1954 to March 1955 and from August 1957 to May 1958.

2. The fractile groups considered are 33 in number of which twenty are of five-per cent each (0–5, 5–10, ... and 95–100); the top 5 per cent and the bottom 5 per cent groups are broken down into five one-per-cent groups (1, 2, 3, 4, 5 and 96, 97, 98, 99 and 100); and three more groups 0–50, 50–100 and 0–100 have been added.

3. In each table, serial numbers or lines 1–33 give estimates for 33 fractile groups considered; the number of sample villages/blocks and number of sample households are given in lines 34 and 35 of the tables. Column (2) gives the specification of the fractile groups. Columns (3)–(5), (6)–(8), (9)–(11) and (12)–(15) give estimates for rural areas Rounds 8 and 13, and urban areas Rounds 8 and 13 respectively, separately, by sub-sample 1, sub-sample 2 and combined samples.

4. Estimates of per capita consumer expenditure in Table 1 refer to expenditure on all items of consumption including services with imputed value for consumption out of homegrown stock. Table 2 gives limiting value of per capita expenditure in rupees at the upper end point of each fractile group separately for the two sub-samples and the combined sample. For example, from column (3) of Table 2 it is seen that the bottom 1, 2, 3, 4 and 5 p.c. fractile groups in Round 8, rural areas, sub-sample 1, had per capita monthly expenditure in rupees of 2.81, 3.27, 3.98, 4.15 and 4.31 respectively. Estimates of per capita expenditure on cereals given in Table 3 include imputed value of consumption out of homegrown stock. Table 8 gives expenditure on cereals expressed as a percentage of consumer expenditure and may be called Engel's ratio for cereals.

5. Cereals include rice, wheat, jowar, bajra, maize, barley, small millets, ragi and their products and a part of gram which is consumed as human food. Rice includes husked paddy and rice products like *chira, muri,* (pressed rice, puffed rice, etc).

Appendix 3: Ratio of Prices 13th to 8th Rounds: Cereals and Rice

serial no.	fractile group (per cent)	rural			urban		
		s.s.1	s.s.2	comb.	s.s.1	s.s.2	comb.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		ratio of prices of cereals					
1	0— 5	1.51	1.56	1.51	1.35	1.18	1.20
2	5—10	1.51	1.61	1.45	1.25	1.42	1.36
3	10—15	1.25	1.42	1.35	1.14	1.17	1.14
4	15—20	1.34	1.67	1.48	1.06	1.11	0.97
5	20—25	1.38	1.36	1.53	1.92	1.09	1.32
6	25—30	1.54	1.26	1.25	1.25	1.22	1.21
7	30—35	1.23	1.70	1.46	1.12	1.45	1.19
8	35—40	1.60	1.39	1.43	1.22	1.10	1.28
9	40—45	1.31	1.50	1.47	1.21	1.32	1.27
10	45—50	1.38	1.40	1.38	1.22	1.19	1.32
11	50—55	1.45	1.21	1.37	1.32	1.26	1.30
12	55—60	1.34	1.24	1.27	1.32	1.28	1.18
13	60—65	1.29	1.25	1.27	1.19	1.16	1.27
14	65—70	1.42	1.52	1.47	1.22	1.25	1.23
15	70—75	1.54	1.34	1.42	1.32	1.13	1.27
16	75—80	1.15	1.30	1.26	1.24	1.24	1.21
17	80—85	1.46	1.39	1.39	1.35	1.21	1.28
18	85—90	1.46	1.21	1.34	1.28	1.22	1.14
19	90—95	1.19	1.29	1.24	1.11	1.33	1.32
20	95—100	1.12	1.12	1.12	1.09	1.23	1.20
21	0—100	1.40	1.36	1.36	1.23	1.23	1.23
		ratio of prices of rice					
1	0— 5	1.58	1.19	1.41	1.55	1.54	1.48
2	5—10	1.40	1.34	1.31	1.16	1.21	1.27
3	10—15	1.12	1.32	1.27	1.65	1.73	1.68
4	15—20	1.32	1.49	1.44	1.32	1.12	1.03
5	20—25	1.61	1.30	1.24	1.22	1.07	1.22
6	25—30	1.56	1.13	1.39	1.14	1.29	1.05
7	30—35	1.28	1.66	1.46	1.15	1.24	1.09
8	35—40	1.50	1.37	1.41	1.33	1.06	1.28
9	40—45	1.02	1.30	1.24	1.49	1.16	1.29
10	45—50	1.38	1.53	1.45	1.50	1.11	1.30
11	50—55	1.60	1.30	1.15	1.30	1.13	1.27
12	55—60	1.60	1.54	1.59	1.34	1.09	1.25
13	60—65	1.39	1.35	1.35	1.63	1.18	1.23
14	65—70	1.36	1.47	1.44	1.48	1.44	1.45
15	70—75	1.66	1.37	1.52	1.40	1.15	1.18
16	75—80	1.34	1.56	1.42	1.25	1.18	1.29
17	80—85	1.39	1.46	1.34	1.22	1.20	1.30
18	85—90	1.34	1.15	1.38	1.38	1.14	1.27
19	90—95	1.54	1.65	1.61	1.16	1.26	1.26
20	95—100	1.36	1.14	1.41	1.33	1.38	1.35
21	0—100	1.44	1.36	1.40	1.37	1.22	1.29

Appendix 4 : Seed requirements

Requirements for seeds can be estimated from data collected by NSS and some relevant figures are given below.

PRODUCTION OF CROP PER UNIT QUANTITY OF SEED USED : NSS ROUNDS 5, 6, AND 7

serial no.	crop	season	1951-52	1952-53		average
			round : 5	round : 6	round : 7	
(0)	(1)	(2)	(3)	(4)	(5)	(6)
1.	paddy	kharif	13.34	13.75	13.91	13.65
2.	wheat	rabi	7.68	7.82	7.89	7.79
3.	*jowar*	kharif	29.89	33.71	36.25	33.25
4.	„	rabi	24.93	21.50	21.86	22.74
5.	*bajra*	kharif	30.71	36.07	31.50	32.73
6.	barley	rabi	7.93	7.79	7.50	7.73
7.	maize	kharif	40.37	34.31	33.06	35.88
8.	*ragi*	„	22.18	19.15	27.94	23.40
9.	„	rabi	20.03	21.18	21.59	20.91

Source : Table 2.10 and Table 1.5 of NSS Reports 32 (part I) and 32 (part II) respectively.

Using NSS figures of aggregate production of different crops, the seed rate for 1958-1959 and 1959-1960 come out as 6.83 and 6.99 per cent; it may be assumed that about 7 per cent of the total production of cereals is used as seeds.

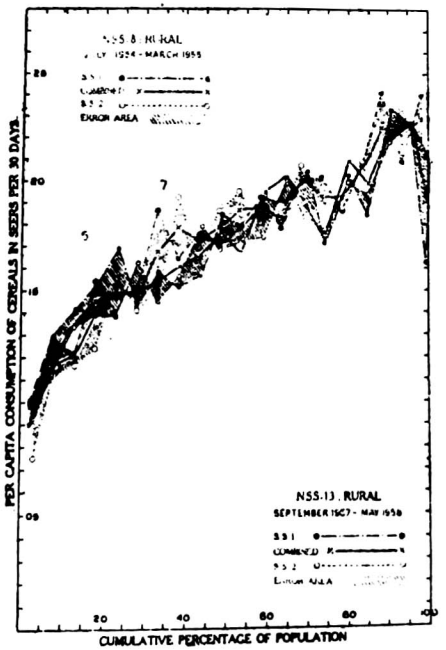

Chart 6.1. NSS-8 and 13 : All-India rural : Per capita consumption of cereals in seers per 30 days

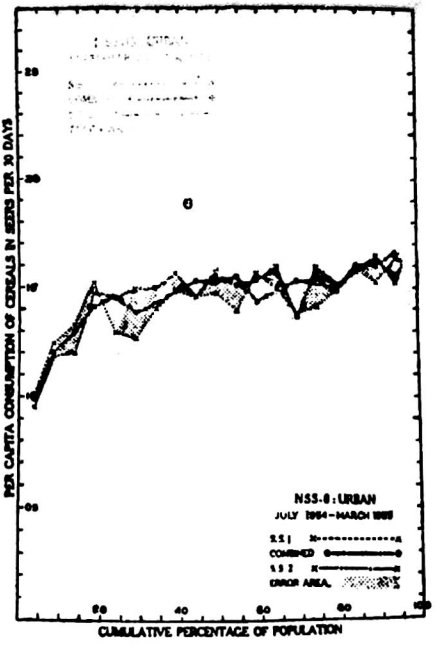

Chart 6.2. NSS-8 and 13 : All-India urban : Per capita consumption of cereals in seers per 30 days

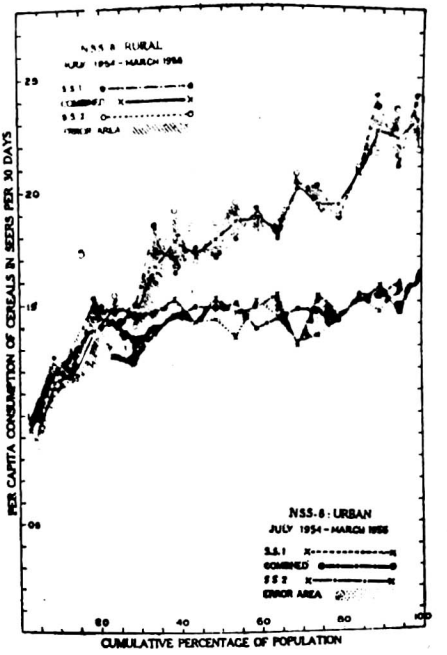

Chart 7.1. NSS-8 : All-India, rural and urban : Per capita consumption of cereals in seers per 30 days

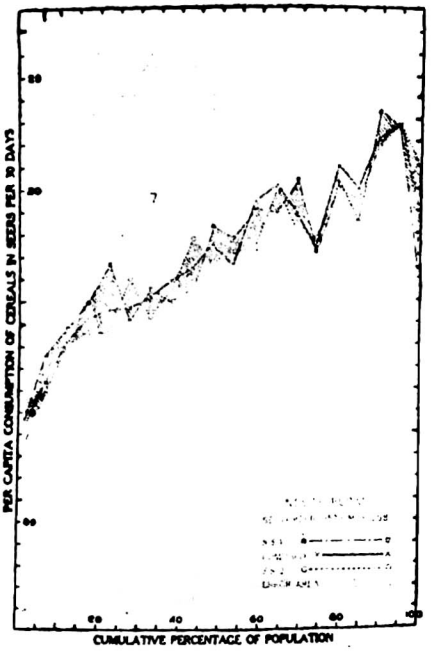

Chart 7.2. NSS-13 : All-India, rural and urban : Per capita consumption of cereals in seers per 30 days

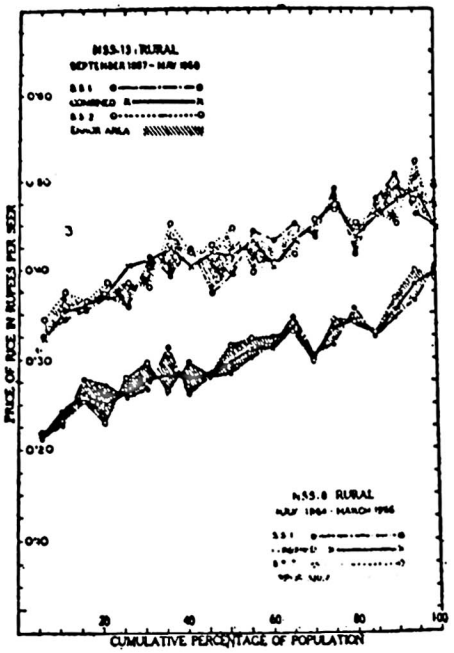

Chart 3.1. NSS-8 and 13: All-India rural: Average price of cereals in rupees per seer

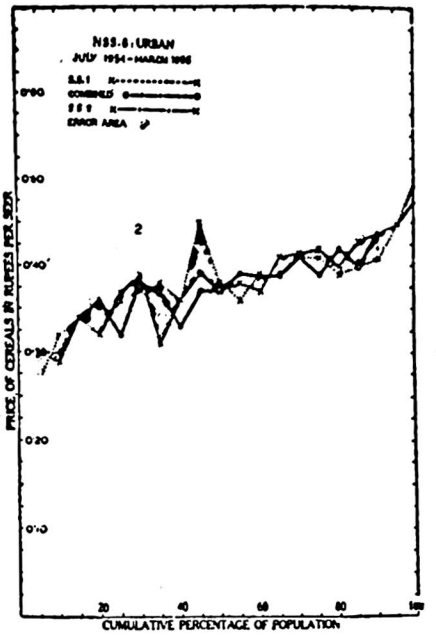

Chart 3.2. NSS-8 and 13: All-India urban: Average price of cereals in rupees per seer

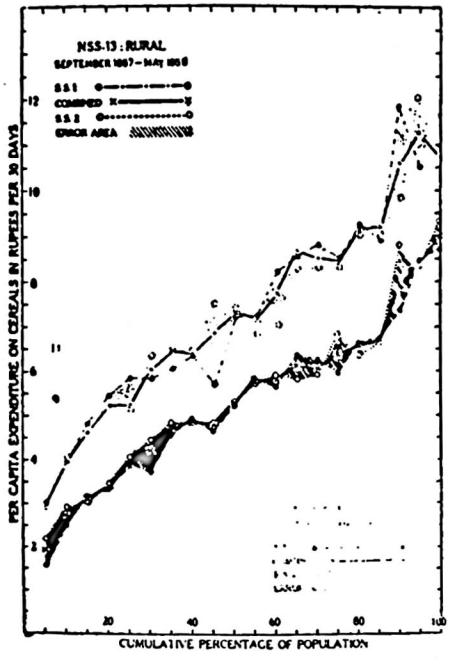

Chart 1.3. NSS-8 and 13: All-India rural: Per capita expenditure on cereals in rupees per 30 days

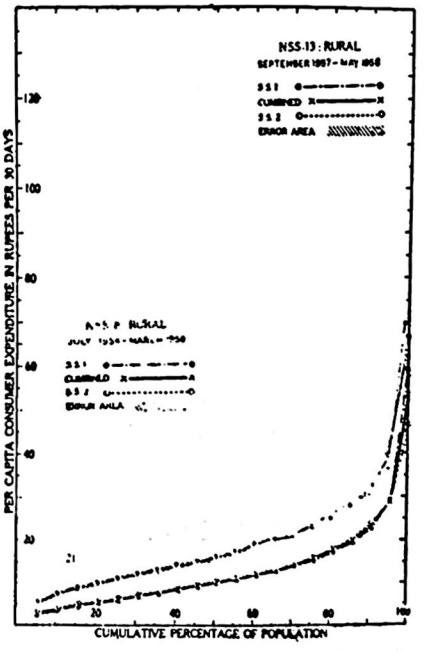

Chart 1.1. NSS-8 and 13: All-India rural: Per capita consumer expenditure in rupees per 30 days

NATIONAL SAMPLE SURVEY : Round 8 : July 1954–March 1955 and Round 13 : September 1957–May 1958

TABLE 1 : AVERAGE PER CAPITA CONSUMER EXPENDITURE IN RUPEES PER 30 DAYS : ALL-INDIA, RURAL AND URBAN

serial no.	fractile group (per cent)	average expenditure in each fractile group											
		rural						urban					
		round 8			round 13			round 8			round 13		
		s.s.1	s.s.2	comb.	s.s.1	s.s.2	comb.	s.s.1	s.s.2	comb.	s.s.1	s.s.2	comb.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	1	2.41	2.97	2.74	3.72	3.58	3.34	4.00	4.24	4.23	4.28	5.63	5.23
2	2	3.12	3.59	3.48	5.09	4.66	5.09	4.83	5.31	5.09	6.61	6.08	6.39
3	3	3.76	4.05	3.91	5.74	5.13	5.39	5.52	5.57	5.53	6.78	6.90	6.79
4	4	4.09	4.48	4.18	6.09	5.56	5.78	5.89	6.18	6.04	6.98	7.28	7.06
5	5	4.22	4.72	4.70	6.13	5.82	6.09	6.42	6.80	6.54	7.48	7.46	7.53
6	0— 5	3.54	4.00	3.80	5.36	4.92	5.14	4.93	5.59	5.48	6.53	6.53	6.58
7	5—10	4.88	5.29	5.16	7.25	6.67	6.95	7.47	7.76	7.61	8.73	8.87	8.76
8	10—15	5.90	6.18	6.04	8.49	8.13	8.29	8.80	9.25	8.96	10.17	10.29	10.26
9	15—20	6.60	6.93	6.79	9.61	8.87	9.12	9.79	10.68	10.22	11.28	11.50	11.46
10	20—25	7.38	7.84	7.61	10.57	9.71	10.11	11.15	12.01	11.48	12.58	12.67	12.67
11	25—30	8.07	8.65	8.37	11.43	10.73	11.14	12.08	13.65	12.64	13.69	14.01	13.89
12	30—35	8.77	9.25	9.02	12.22	11.62	12.01	13.29	14.60	13.74	14.83	15.40	16.26
13	35—40	9.76	9.78	9.72	13.45	12.46	12.86	14.21	15.78	14.81	16.06	16.71	16.44
14	40—45	10.50	10.44	10.50	13.96	13.53	14.02	15.27	17.72	16.08	17.15	18.27	17.85
15	45—50	11.32	11.34	11.30	14.98	13.97	14.88	16.72	19.41	17.80	18.57	19.82	18.92
16	50—55	12.15	12.18	12.17	16.06	15.59	15.94	18.25	20.80	19.30	20.06	21.45	20.85
17	55—60	13.07	13.12	13.09	17.66	16.79	17.49	19.75	22.44	20.92	21.38	22.98	23.47
18	60—65	14.15	14.47	14.35	18.49	18.37	18.83	21.81	25.49	22.64	23.24	24.75	24.51
19	65—70	15.49	15.77	15.52	19.21	19.47	18.81	23.55	28.14	25.08	25.68	27.16	26.71
20	70—75	16.89	17.52	17.34	21.09	21.39	21.37	25.70	31.74	27.63	28.18	29.34	28.91
21	75—80	18.54	19.55	19.00	22.87	23.63	23.94	28.69	35.25	31.40	30.87	32.78	32.11
22	80—85	20.84	21.98	21.44	25.83	26.62	26.37	33.81	39.79	35.94	34.74	38.33	37.35
23	85—90	24.00	25.62	24.64	28.39	29.52	28.00	41.32	47.30	42.07	40.10	44.92	43.85
24	90—95	30.46	30.12	30.16	34.10	38.59	36.70	49.79	59.43	53.46	50.63	56.16	55.93
25	95—100	62.42	47.88	54.15	66.93	58.03	59.81	80.60	117.00	100.11	81.35	93.87	91.75
26	96	37.35	34.79	34.47	40.37	41.46	41.70	57.26	72.68	65.70	62.75	63.39	62.71
27	97	41.80	37.43	38.51	45.39	44.71	45.84	62.62	92.92	71.46	70.46	65.98	70.10
28	98	49.79	39.13	45.41	52.35	49.22	53.09	69.51	125.51	84.96	79.15	72.14	79.60
29	99	59.07	50.45	53.32	61.58	62.17	75.83	79.06	141.23	118.71	97.21	92.61	91.01
30	100	118.38	77.46	93.62	113.82	114.69	124.69	133.18	154.61	158.83	161.12	127.08	141.24
31	0—50	7.69	7.98	7.83	10.74	10.06	10.46	12.11	12.66	12.31	13.09	13.30	13.21
32	50—100	22.84	21.95	22.09	25.95	26.63	26.45	33.38	42.72	37.84	36.52	38.55	37.66
33	0—100	14.93	14.98	14.96	18.31	18.33	18.32	22.44	27.69	25.04	24.63	26.00	25.36
no. of s. villages/blocks		353	353	706	(462)	(462)	(924)	(238)	(228)	(466)	(585)	(583)	(1168)
no. of s. households		931	938	1869	728	738	1466	224	223	447	237	252	489

TABLE 2: LIMITING VALUE IN RUPEES AT UPPER END IN EACH FRACTILE GROUP : ALL-INDIA, RURAL AND URBAN

serial no.	fractile group (per cent)	limiting value in rupees at upper end in each fractile group											
		rural						urban					
		round 8			round 13			round 8			round 13		
		s.s.1	s.s.2	comb.	s.s.1	s.s.2	comb.	s.s.1	s.s.2	comb.	s.s.1	s.s.2	comb.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	1	2.81	3.21	2.96	4.45	4.23	4.50	4.71	4.93	4.73	5.92	5.90	5.91
2	2	3.27	3.94	3.77	5.41	4.91	5.07	5.14	5.37	5.35	6.72	6.09	6.62
3	3	3.98	4.18	4.04	5.94	5.27	5.65	5.74	5.97	5.74	6.86	6.82	6.94
4	4	4.15	4.55	4.30	6.18	5.85	6.05	6.22	6.40	6.34	7.22	7.05	7.28
5	5	4.31	4.81	4.57	6.50	6.11	6.32	6.55	7.00	6.67	7.67	7.77	7.77
6	0— 5	4.31	4.81	4.57	6.50	6.11	6.32	6.55	7.00	6.67	7.67	7.77	7.77
7	5—10	5.48	5.89	5.70	7.90	7.53	7.75	8.14	8.52	8.30	9.64	9.69	9.67
8	10—15	6.25	6.56	6.40	9.03	8.52	8.75	9.37	10.15	9.59	10.70	10.93	10.79
9	15—20	7.01	7.39	7.18	10.05	9.34	9.70	10.22	11.24	10.82	11.88	12.08	12.07
10	20—25	7.78	8.33	8.02	11.04	10.11	10.65	11.76	12.66	12.15	13.30	13.36	13.36
11	25—30	8.26	8.93	8.67	11.70	11.15	11.63	12.68	14.02	13.29	14.16	14.65	14.40
12	30—35	9.21	9.52	9.39	12.78	11.99	12.44	13.73	15.02	14.24	15.33	16.01	15.65
13	35—40	10.15	10.18	10.17	13.43	12.87	13.27	14.65	16.91	15.30	16.70	17.66	17.05
14	40—45	10.91	10.80	10.86	14.38	14.12	14.37	15.87	18 76	17.02	18.15	18.69	18.35
15	45—50	11.74	11.75	11.74	15.28	15.07	15.24	17.42	20.17	18.50	19.07	20.63	19.83
16	50—55	12.50	12.56	12.53	16.60	16.17	16.43	18.78	21.53	20.06	20.80	22.17	21.57
17	55—60	13.73	13.70	13.72	17.68	17.33	17.55	20.91	23.79	21.73	22.50	24.03	23.40
18	60—65	14.66	14.65	14.80	18.98	18.83	18.95	22.50	26.39	23.71	24.22	25.99	25.54
19	65—70	16.23	16.69	16.42	20.35	20.21	20.37	24.45	29.65	26.08	26.82	28.33	27.80
20	70—75	17.45	18.37	17.89	22.26	22.53	22.47	27.13	38.22	29.16	28.88	30.99	30.11
21	75—80	19.72	20.83	20.22	24.49	24.70	24.64	30.92	37.20	33.48	32.29	35.65	34.77
22	80—85	21.92	23.52	22.75	26.69	27.54	27.27	36.78	42.06	38.59	37.24	40.76	40.18
23	85—90	26.79	28.03	27.55	31.83	32.15	32.44	46.71	53.61	46.65	44.56	48.91	48.73
24	90—95	35.11	33.25	34.13	38.45	40.34	40.34	52.97	70.29	63.49	57.80	62.71	63.63
25	95—100	239.25	112.96	239.25	305.55	295.54	305.55	525.07	333.92	525.07	279.02	307.69	307.69
26	96	38.44	36.27	36.66	42.43	42.38	43.39	59.55	76.76	68.41	69.16	63.39	67.72
27	97	46.46	38.02	40.93	48.96	46.13	48.96	65.05	107.45	75.08	74.15	68.48	73.47
28	98	52.66	41.29	48.24	56.06	56.19	58.58	72.31	127.18	101.34	86.48	78.08	88.34
29	99	64.75	60.33	61.35	84.02	84.69	95.92	88.27	150.13	129.82	105.86	114.44	106.69
30	100	239.25	112.96	239.25	305.55	295.54	305.55	525.07	333.92	525.07	279.02	307.69	307.69
31	0—50	11.74	11.75	11.74	15.28	15.07	15.24	17.42	20.17	18.50	19.07	20.63	19.83
32	50—100	239.25	112.96	239.25	305.55	295.54	305.55	525.07	333.92	525.07	279.02	307.69	307.69
33	0—100	239.25	112.96	239.25	305.55	295.54	305.55	525.07	333.92	525.07	279.02	307.69	307.69
no. of s. villages/blocks		353	353	706	(462)	(462)	(924)	(238)	(228)	(466)	(585)	(583)	(1168)
no. of s. households		931	938	1869	728	738	1466	224	223	447	337	252	489

NATIONAL SAMPLE SURVEY : Round 8 : July 1954–March 1955 and Round 13 : September 1957–May 1958

TABLE 3 : AVERAGE PER CAPITA EXPENDITURE ON CEREALS IN RUPEES PER 30 DAYS : ALL-INDIA, RURAL AND URBAN

serial no.	fractile group (per cent)	average expenditure in each fractile group											
		rural						urban					
		round 8			round 13			round 8			round 13		
		s.s.1	s.s.2	comb.	s.s.1	s.s.2	comb.	s.s.1	s.s.2	comb.	s.s.1	s.s.2	comb.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	1	0.68	1.65	1.20	1.65	1.66	1.59	2.32	2.51	2.04	1.53	3.85	3.16
2	2	1.60	1.94	1.86	3.13	2.50	2.88	2.23	3.14	3.04	4.63	3.13	3.74
3	3	2.05	2.23	1.91	3.40	3.13	3.03	2.75	2.23	2.44	3.63	2.65	3.48
4	4	1.28	2.59	2.03	4.03	3.63	3.75	2.97	3.48	3.33	4.25	4.08	3.66
5	5	2.14	2.47	2.52	3.43	3.81	3.84	3.35	2.93	3.39	1.57	4.09	3.11
6	0— 5	1.58	2.20	1.91	3.13	2.95	3.03	2.43	2.86	2.85	3.74	3.50	3.58
7	5—10	2.50	2.91	2.75	4.03	4.07	4.00	3.68	3.52	3.48	3.90	4.65	4.33
8	10—15	3.18	3.03	3.11	4.86	4.72	4.69	3.92	4.37	4.21	3.90	4.95	4.55
9	15—20	3.32	3.49	3.42	5.48	5.27	5.31	4.59	4.59	4.81	5.49	5.54	5.49
10	20—25	3.93	4.06	3.87	5.91	5.25	5.29	5.05	4.56	4.65	5.35	4.68	5.05
11	25—30	3.72	4.46	4.22	5.91	6.39	6.07	4.93	4.73	5.12	5.35	6.83	6.12
12	30—35	4.56	4.87	4.70	6.10	6.54	6.47	5.52	4.51	5.00	6.13	5.26	6.55
13	35—40	4.99	4.85	4.91	6.35	6.48	6.41	5.26	5.50	4.89	7.21	5.26	6.27
14	40—45	4.69	4.88	4.81	5.78	7.57	6.91	5.29	5.50	5.43	6.96	6.59	5.18
15	45—50	5.23	5.31	5.25	7.24	7.47	7.31	5.38	5.26	5.73	5.07	6.01	6.61
16	50—55	5.85	5.73	5.78	7.29	6.86	7.22	5.69	5.11	5.50	8.90	5.82	6.88
17	55—60	5.68	5.93	5.81	8.29	7.07	7.78	5.70	6.14	5.37	6.99	6.60	6.48
18	60—65	6.37	5.83	6.11	8.62	8.33	8.70	5.66	5.89	5.64	7.06	8.37	7.89
19	65—70	6.25	5.92	6.06	8.89	8.36	8.57	6.84	5.36	6.04	6.68	6.48	6.50
20	70—75	5.96	6.88	6.38	8.59	8.37	8.41	5.70	5.22	5.71	8.60	8.66	8.70
21	75—80	6.63	6.34	6.58	9.30	9.07	9.23	6.03	6.49	5.58	8.20	7.40	8.07
22	80—85	6.74	6.61	6.70	8.98	9.04	9.27	5.80	6.44	6.27	8.45	7.78	7.49
23	85—90	7.35	8.80	7.89	11.94	9.90	10.68	6.48	6.29	6.58	7.66	8.41	8.15
24	90—95	8.48	8.31	8.43	10.53	12.02	11.27	6.45	7.00	7.11	7.75	8.08	8.44
25	95—100	8.68	9.31	8.98	11.12	10.50	10.72	8.38	7.74	7.38	8.35	8.81	8.51
26	96	9.93	8.94	8.81	10.08	9.39	9.71	9.54	5.97	6.28	9.26	10.06	8.55
27	97	7.49	7.10	9.00	11.43	12.31	11.68	6.79	7.34	6.27	9.27	8.14	8.41
28	98	9.10	10.75	8.56	9.66	12.04	9.79	6.20	7.79	7.66	6.68	6.03	7.64
29	99	8.56	9.39	9.02	9.50	9.96	10.22	6.88	8.63	7.52	7.97	7.57	6.94
30	100	8.25	10.51	9.31	8.75	10.65	9.39	9.87	7.85	9.16	4.45	12.39	11.33
31	0—50	3.79	4.00	3.89	5.48	5.66	5.60	4.59	4.50	4.50	5.25	5.31	5.32
32	50—100	6.84	6.98	6.69	9.43	9.15	9.30	6.03	6.17	6.17	7.89	7.62	7.71
33	0—100	5.09	5.49	5.29	7.45	7.40	7.43	5.31	5.35	5.33	6.55	6.47	6.51
no. of s. villages/blocks		353	353	706	(462)	(462)	(924)	(238)	(228)	(466)	(585)	(583)	(1168)
no. of s. households		931	938	1869	728	738	1466	224	223	447	237	252	489

TABLE 4 : AVERAGE PRICE OF CEREALS IN RUPEES PER SEER : ALL-INDIA, RURAL AND URBAN

serial no.	fractile group (per cent)	average price in each fractile group											
		rural						urban					
		round 8			round 13			round 8			round 13		
		s.s.1	s.s.2	comb.	s.s.1	s.s.2	comb.	s.s.1	s.s.2	comb.	s.s.1	s.s.2	comb.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	1	0.219	0.217	0.204	0.263	0.328	0.283	0.420	0.228	0.319	0.378	0.336	0.341
2	2	0.166	0.184	0.191	0.344	0.259	0.306	0.299	0.360	0.267	0.617	0.397	0.429
3	3	0.225	0.206	0.204	0.277	0.431	0.284	0.257	0.417	0.317	0.398	0.266	0.384
4	4	0.201	0.198	0.214	0.293	0.308	0.310	0.258	0.278	0.315	0.298	0.326	0.298
5	5	0.234	0.275	0.214	0.406	0.374	0.363	0.317	0.367	0.297	0.440	0.571	0.540
6	0— 5	0.208	0.213	0.207	0.314	0.332	0.312	0.268	0.299	0.300	0.363	0.354	0.360
7	5—10	0.221	0.226	0.235	0.333	0.363	0.341	0.323	0.293	0.301	0.403	0.415	0.410
8	10—15	0.273	0.248	0.257	0.342	0.352	0.347	0.342	0.341	0.338	0.391	0.400	0.386
9	15—20	0.266	0.225	0.245	0.357	0.375	0.363	0.323	0.323	0.364	0.343	0.360	0.354
10	20—25	0.252	0.275	0.258	0.347	0.375	0.394	0.359	0.367	0.321	0.430	0.401	0.423
11	25—30	0.263	0.202	0.320	0.404	0.369	0.401	0.367	0.391	0.383	0.457	0.476	0.462
12	30—35	0.310	0.261	0.279	0.382	0.444	0.414	0.385	0.310	0.373	0.432	0.451	0.445
13	35—40	0.258	0.293	0.275	0.412	0.407	0.394	0.355	0.360	0.332	0.433	0.395	0.424
14	40—45	0.276	0.277	0.278	0.362	0.416	0.409	0.454	0.394	0.369	0.509	0.521	0.470
15	45—50	0.280	0.311	0.294	0.385	0.436	0.405	0.383	0.374	0.370	0.466	0.445	0.487
16	50—55	0.299	0.320	0.309	0.434	0.387	0.422	0.357	0.385	0.390	0.472	0.487	0.508
17	55—60	0.314	0.320	0.309	0.422	0.398	0.392	0.394	0.374	0.386	0.520	0.480	0.454
18	60—65	0.344	0.326	0.333	0.443	0.406	0.423	0.390	0.413	0.388	0.464	0.479	0.491
19	65—70	0.301	0.295	0.301	0.426	0.447	0.443	0.411	0.415	0.409	0.500	0.518	0.504
20	70—75	0.314	0.341	0.330	0.484	0.457	0.469	0.407	0.420	0.392	0.538	0.475	0.499
21	75—80	0.354	0.339	0.340	0.408	0.442	0.420	0.387	0.398	0.421	0.480	0.493	0.508
22	80—85	0.322	0.327	0.325	0.471	0.453	0.452	0.404	0.427	0.405	0.546	0.518	0.517
23	85—90	0.342	0.365	0.351	0.500	0.442	0.470	0.414	0.435	0.436	0.529	0.530	0.498
24	90—95	0.363	0.399	0.381	0.454	0.515	0.483	0.446	0.450	0.447	0.493	0.599	0.589
25	95—100	0.403	0.388	0.392	0.438	0.448	0.436	0.500	0.499	0.482	0.543	0.612	0.576
26	96	0.410	0.393	0.383	0.408	0.431	0.421	0.464	0.467	0.470	0.571	0.437	0.530
27	97	0.370	0.344	0.381	0.443	0.537	0.482	0.455	0.545	0.460	0.521	0.425	0.547
28	98	0.417	0.396	0.379	0.470	0.475	0.482	0.445	0.511	0.494	0.534	0.608	0.581
29	99	0.358	0.356	0.376	0.397	0.390	0.405	0.437	0.462	0.527	0.498	0.685	0.595
30	100	0.453	0.442	0.436	0.514	0.493	0.482	0.537	0.530	0.490	0.611	0.654	0.650
31	0—50	0.259	0.266	0.265	0.366	0.394	0.381	0.346	0.347	0.341	0.423	0.422	0.423
32	50—100	0.321	0.342	0.330	0.447	0.440	0.446	0.406	0.422	0.419	0.508	0.518	0.514
33	0—100	0.295	0.309	0.302	0.413	0.421	0.418	0.381	0.386	0.382	0.470	0.473	0.472
no. of s. villages/blocks		353	353	706	(462)	(462)	(924)	(238)	(228)	(466)	(585)	(583)	(1168)
no. of s. households		931	938	1869	728	738	1466	224	223	447	237	252	489

TABLE 5: PERCENTAGE OF RICE TO CEREALS (QUANTITY): ALL-INDIA, RURAL AND URBAN

serial no.	fractile group (per cent)	percentage of rice to cereals (quantity)											
		rural						urban					
		round 8			round 13			round 8			round 13		
		s.s.1	s.s.2	comb.	s.s.1	s.s.2	comb.	s.s.1	s.s.2	comb.	s.s.1	s.s.2	comb.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	1	28.62	22.13	20.88	18.31	15.61	17.08	0.00	26.25	12.36	38.31	1.38	6.16
2	2	12.17	11.88	18.69	24.42	47.82	33.51	1.48	99.20	41.35	83.33	7.94	32.28
3	3	34.98	26.18	23.88	7.89	60.19	26.50	22.57	0.00	40.83	71.66	4.55	64.81
4	4	20.44	16.23	32.31	20.19	15.86	18.83	17.29	8.55	42.01	0.93	0.00	1.84
5	5	48.96	26.14	25.23	49.88	25.78	35.35	51.14	54.19	9.81	60.00	100.00	90.36
6	0— 5	30.00	19.92	24.89	22.65	31.83	26.80	18.72	44.77	28.66	33.14	15.86	24.14
7	5—10	30.65	25.47	28.12	27.71	32.38	30.41	30.29	30.75	36.33	39.15	40.71	41.15
8	10—15	30.64	31.45	30.50	34.32	30.28	29.88	36.21	54.84	42.46	20.16	20.50	17.73
9	15—20	31.62	33.61	33.31	32.99	34.69	33.13	73.37	51.63	71.37	7.31	28.35	22.67
10	20—25	39.01	40.81	39.68	34.37	29.52	39.51	65.55	57.26	53.82	40.31	40.65	38.36
11	25—30	43.04	40.84	44.95	36.82	42.41	41.81	35.69	50.45	43.04	71.51	62.72	59.29
12	30—35	55.99	48.18	47.71	43.51	54.48	47.76	15.11	44.41	36.54	25.79	50.94	59.89
13	35—40	39.31	46.52	43.65	55.87	45.25	40.77	39.14	77.44	44.20	52.67	39.59	49.09
14	40—45	46.49	34.22	40.49	41.55	42.22	49.11	56.36	60.56	66.62	77.56	69.17	53.13
15	45—50	44.84	55.88	49.83	44.01	41.81	40.16	51.29	44.82	56.40	43.75	36.71	57.92
16	50—55	58.67	57.10	57.88	34.83	38.78	43.31	68.53	39.34	62.52	52.41	53.94	52.99
17	55—60	54.92	63.10	57.45	41.57	28.87	27.74	58.66	54.84	50.48	71.00	50.87	44.47
18	60—65	73.50	45.39	59.12	51.05	42.11	47.69	67.28	58.44	62.35	35.72	81.64	69.15
19	65—70	44.41	44.84	45.21	41.42	47.46	46.25	80.15	66.20	59.11	47.79	51.36	49.88
20	70 —75	55.43	64.77	59.32	44.70	45.24	43.89	62.14	44.10	54.45	72.98	35.89	52.67
21	75—80	60.41	51.50	56.75	46.97	33.98	40.75	33.22	62.66	42.63	49.65	83.07	60.52
22	80—85	54.26	45.17	50.05	51.47	47.17	47.78	33.60	60.45	52.88	45.60	62.03	58.45
23	85—90	52.65	67.36	58.36	60.90	45.33	53.17	77.55	47.23	59.04	51.48	50.19	44.50
24	90—95	56.42	69.12	66.40	41.18	55.63	49.12	42.39	49.00	61.31	46.56	72.55	69.36
25	95 —100	62.48	58.12	59.87	27.14	45.16	43.42	60.22	57.47	44.95	52.11	45.07	46.89
26	96	75.50	55.30	61.77	36.40	24.36	22.50	60.81	98.44	37.12	63.65	0.00	51.00
27	97	57.19	64.44	60.12	53.91	52.00	62.32	83.57	65.45	45.74	49.00	49.65	61.87
28	98	67.14	71.88	52.90	76.48	69.14	76.20	39.83	20.66	55.33	33.60	57.37	37.88
29	99	50.92	28.18	48.66	32.53	35.05	28.79	59.47	85.46	30.59	40.38	38.76	39.32
30	100	37.84	66.34	61.53	32.02	47.27	47.33	44.86	37.36	69.98	40.38	43.81	43.48
31	0- -50	40.12	39.60	39.65	38.50	30.26	32.73	43.40	51.83	48.82	40.45	41.40	42.59
32	50- -100	57.26	57.70	57.09	45.73	41.43	44.25	57.02	53.15	55.29	52.03	60.30	55.67
33	0 -100	49.88	49.72	48.65	41.62	41.01	41.32	51.87	52.07	52.22	46.77	51.65	49.38
no. of s. villages/blocks		353	353	706	(462)	(462)	(924)	(238)	(228)	(466)	(585)	(583)	(1168)
no. of s. households		931	938	1869	728	738	1466	224	223	447	237	232	469

TABLE 6: AVERAGE PRICE OF RICE IN RUPEES PER SEER: ALL-INDIA, RURAL AND URBAN

serial no.	fractile group (per cent)	average price in each fractile group											
		rural						urban					
		round 8			round 13			round 8			round 13		
		s.s.1	s.s.2	comb.	s.s.1	s.s.2	comb.	s.s.1	s.s.2	comb.	s.s.1	s.s.2	comb.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	1	0.326	0.345	0.325	0.513	0.418	0.469	–	0.515	0.393	0.503	0.688	0.544
2	2	0.282	0.464	0.330	0.423	0.325	0.403	0.500	0.359	0.357	0.650	0.492	0.637
3	3	0.279	0.327	0.323	0.485	0.430	0.456	0.206	–	0.320	0.413	0.600	0.412
4	4	0.277	0.335	0.301	0.385	0.786	0.434	0.314	0.250	0.384	0.615	–	0.609
5	5	0.291	0.434	0.316	0.477	0.449	0.457	0.402	0.404	0.352	0.500	0.571	0.560
6	0— 5	0.285	0.374	0.313	9.451	0.445	0.442	0.318	0.371	0.353	0.493	0.573	0.521
7	5—10	0.306	0.341	0.337	0.427	0.457	0.440	0.412	0.412	0.383	0.478	0.498	0.485
8	10—15	0.378	0.364	0.369	0.423	0.480	0.470	0.364	0.323	0.344	0.602	0.559	0.578
9	15—20	0.363	0.304	0.333	0.479	0.454	0.479	0.381	0.363	0.395	0.504	0.40C	0.406
10	20—25	0.322	0.357	0.332	0.485	0.465	0.413	0.424	0.428	0.418	0.519	0.456	0.511
11	25—30	0.328	0.365	0.353	0.512	0.414	0.490	0.422	0.416	0.494	0.483	0.538	0.520
12	30—35	0.358	0.307	0.333	0.458	0.511	0.485	0.491	0.427	0.408	0.566	0.530	0.444
13	35—40	0.315	0.359	0.335	0.473	0.493	0.472	0.382	0.454	0.398	0.508	0.480	0.510
14	40—45	0.307	0.395	0.349	0.312	0.514	0.434	0.364	0.476	0.423	0.541	0.554	0.545
15	45—50	0.347	0.362	0.354	0.478	0.554	0.515	0.413	0.471	0.437	0.618	0.522	0.570
16	50—55	0.351	0.373	0.361	0.563	0.484	0.421	9.424	0.498	0.452	0.526	0.564	0.575
17	55—60	0.339	0.351	0.347	0.542	0.540	0.552	0.422	0.458	0.426	0.566	0.501	0.531
18	60—65	0.381	0.392	0.386	0.528	0.530	0.521	0.362	0.418	0.422	0.589	0.493	0.521
19	65—70	0.407	0.358	0.382	0.552	0.528	0.550	0.408	0.422	0.411	0.604	0.606	0.594
20	70—75	0.373	0.384	0.379	0.620	0.525	0.576	0.419	0.522	0.496	0.587	0.602	0.584
21	75—80	0.391	0.379	0.386	0.522	0.592	0.548	0.472	0.428	0.451	0.588	0.507	0.584
22	80—85	0.384	0.394	0.402	0.532	0.576	0.538	0.507	0.468	0.438	0.618	0.563	0.570
23	85—90	0.402	0.402	0.393	0.540	0.464	0.541	0.436	0.543	0.484	0.603	0.621	0.615
24	90—95	0.397	0.343	0.366	0.612	0.567	0.589	0.552	0.486	0.498	0.641	0.613	0.625
25	95—100	0.431	0.424	0.426	0.585	0.483	0.603	0.474	0.498	0.497	0.632	0.685	0.672
26	96	0.429	0.409	0.408	0.737	0.443	0.536	0.462	0.428	0.413	0.622	–	0.708
27	97	0.401	0.376	0.410	0.458	0.456	0.480	0.417	0.496	0.471	0.607	0.496	0.606
28	98	0.450	0.425	0.423	0.616	0.527	0.554	0.567	0.546	0.505	0.757	0.679	0.751
29	99	0.394	0.471	0.435	0.519	0.437	0.573	0.427	0.463	0.473	0.651	0.785	0.719
30	100	0.478	0.456	0.468	0.714	0.524	0.576	0.557	0.662	0.524	0.741	0.669	0.772
31	0—50	0.333	0.351	0.342	0.450	0.488	0.502	0.399	0.420	0.415	0.530	0.510	0.509
32	50—100	0.389	0.388	0.388	0.557	0.520	0.524	0.437	0.468	0.454	0.603	0.566	0.583
33	0—100	0.369	0.376	0.373	0.531	0.512	0.521	0.420	0.447	0.431	0.575	0.545	0.554
no. of s. villages/blocks		353	353	706	(462)	(462)	(924)	(238)	(228)	(466)	(585)	(583)	(1168)
no. of s. households		931	938	1869	728	738	1466	224	223	447	237	252	489

NATIONAL SAMPLE SURVEY : Round 8 : July 1954–March 1955 and Round 13 : September 1957–May 1958

TABLE 7 : AVERAGE PER CAPITA CONSUMPTION OF CEREALS IN SEERS PER 30 DAYS : ALL-INDIA, RURAL AND URBAN

sorial no.	fractile group (per cent)	average consumption in each fractile group											
		rural						urban					
		round 8			round 13			round 8			round 13		
		s.s.1	s.s.2	comb.	s.s.1	s.s.2	comb.	s.s.1	s.s.2	comb.	s.s.1	s.s.2	comb.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	1	3.11	7.59	5.89	6.28	5.06	5.62	5.52	11.01	6.39	4.05	11.47	9.27
2	2	9.61	10.52	9.74	9.09	9.64	9.40	7.42	8.73	11.39	7.50	7.88	8.71
3	3	9.12	10.85	9.34	12.29	7.26	10.68	10.72	5.35	7.69	9.13	9.95	9.06
4	4	6.36	13.06	9.47	13.77	11.79	12.11	10.41	12.52	10.57	14.27	12.50	12.26
5	5	9.13	8.99	11.77	8.44	10.20	10.58	10.56	7.99	11.42	3.57	7.16	5.76
6	0— 5	7.60	10.34	9.24	9.98	8.89	9.70	9.08	9.56	9.49	10.29	9.90	9.94
7	5—10	11.29	12.88	11.70	12.09	11.21	11.74	11.39	12.00	11.56	9.68	11.20	10.57
8	10—15	11.65	12.24	12.10	14.19	13.41	13.52	11.46	12.82	12.46	9.97	12.39	11.79
9	15—20	12.46	15.53	13.96	15.37	14.04	14.61	14.23	14.68	13.62	16.00	15.38	15.52
10	20—25	15.61	14.75	15.02	17.05	13.99	14.96	14.08	12.41	14.01	12.43	11.66	11.94
11	25—30	14.15	15.28	14.75	14.64	16.41	15.14	14.40	12.09	13.29	11.69	14.35	13.24
12	30—35	14.70	18.68	16.83	15.95	14.74	15.64	14.43	13.60	13.60	14.19	11.66	14.71
13	35—40	19.31	16.53	17.87	15.41	15.91	16.26	15.05	14.32	14.32	16.67	13.31	14.79
14	40—45	16.97	17.59	17.29	15.98	18.19	16.88	14.00	13.97	14.74	13.68	12.65	11.01
15	45—50	18.69	17.09	17.88	18.79	17.15	18.03	15.11	14.08	14.68	10.88	13.51	13.57
16	50—55	19.55	17.88	18.71	18.26	17.74	17.11	14.52	13.27	14.86	18.85	11.94	13.55
17	55—60	18.10	19.51	18.80	19.63	17.77	19.86	14.66	14.97	13.67	13.45	13.74	14.28
18	60—65	18.49	17.91	18.32	19.45	20.52	20.59	15.34	14.27	14.21	15.20	17.48	16.08
19	65—70	20.76	20.07	20.15	20.86	18.71	19.36	12.95	13.11	14.60	13.37	12.50	12.89
20	70—75	18.98	20.18	19.32	17.74	18.30	17.93	15.24	13.38	14.62	15.99	18.25	17.43
21	75—80	18.74	18.68	19.33	20.78	20.54	21.52	14.42	14.06	14.05	17.10	15.00	15.88
22	80—85	20.90	20.70	20.60	19.06	19.97	20.53	14.97	15.07	15.30	15.46	15.01	14.49
23	85—90	21.48	24.08	22.50	23.86	22.39	22.70	15.68	14.46	15.26	14.49	15.88	16.36
24	90—95	23.38	20.85	22.11	23.21	23.33	23.29	14.39	15.57	15.92	15.72	13.48	14.33
25	95—100	21.56	24.00	22.90	25.39	23.43	24.57	16.54	15.52	15.55	15.37	14.40	14.78
26	96	24.20	22.73	22.99	24.70	21.80	23.08	20.54	12.78	14.17	16.21	23.00	16.12
27	97	20.23	20.64	23.61	25.79	22.92	24.25	14.97	13.46	13.51	17.78	16.14	15.38
28	98	21.82	27.13	22.61	20.54	25.34	20.29	13.91	15.25	16.23	12.50	9.91	13.14
29	99	23.88	26.38	23.98	23.92	25.51	25.22	15.74	20.84	13.86	15.99	11.05	11.67
30	100	18.22	23.79	21.34	17.02	21.60	19.48	18.39	14.80	18.69	7.28	19.39	17.43
31	0—50	14.52	15.11	14.70	14.96	14.39	14.79	13.27	13.10	13.19	12.41	12.62	12.60
32	50—100	19.89	20.40	20.30	21.10	21.17	20.86	14.85	14.62	14.74	15.53	14.71	15.00
33	0—100	17.20	17.76	17.50	18.02	17.58	17.79	14.06	13.86	13.96	13.94	13.67	13.79
no. of s. villages/blocks		353	353	706	(462)	(462)	(924)	(238)	(228)	(466)	(585)	(583)	(1168)
no. of s. households		931	938	1869	726	738	1466	224	223	447	237	252	489

NATIONAL SAMPLE SURVEY : Round 8 : July 1954–March 1955 and Round 13 : September 1957–May 1958

TABLE 8: EXPENDITURE ON CEREALS AS PERCENTAGE OF CONSUMER EXPENDITURE: ALL-INDIA, RURAL AND URBAN

serial no.	fractile group (per cent)	expenditure on cereals as percentage of consumer expenditure											
		rural						urban					
		round 8			round 13			round 8			round 13		
		s.s.1	s.s.2	comb.	s.s.1	s.s.2	comb.	s.s.1	s.s.2	comb.	s.s.1	s.s.2	comb.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	1	28.22	55.56	43.80	44.35	46.37	47.60	58.00	59.20	48.23	35.76	68.36	60.45
2	2	51.28	54.04	53.45	61.49	53.65	56.58	46.17	59.13	59.72	70.12	51.36	58.50
3	3	54.52	55.06	48.85	59.23	61.01	56.22	49.82	40.04	44.12	53.54	38.36	51.25
4	4	31.30	57.81	48.56	66.17	65.28	64.88	50.42	56.31	55.13	60.91	56.10	51.82
5	5	50.71	52.33	53.62	55.95	65.46	63.05	52.18	43.09	51.83	48.61	54.85	53.49
6	0— 5	44.63	55.00	50.26	58.40	59.96	58.95	49.29	51.16	52.01	57.27	53.60	54.41
7	5—10	51.23	55.01	52.29	55.59	61.02	57.55	49.26	45.36	45.73	44.67	52.42	49.43
8	10—15	53.90	49.03	51.49	57.24	58.06	56.57	44.55	47.24	46.99	38.35	48.10	44.35
9	15—20	50.30	50.36	50.37	57.02	59.41	58.22	46.88	42.98	47.06	48.67	48.17	47.91
10	20—25	53.25	51.79	50.85	55.91	66.20	58.26	45.29	37.97	40.51	42.53	36.94	39.86
11	25—30	46.10	51.56	50.42	51.71	59.55	54.49	40.81	34.65	40.51	39.01	48.75	44.06
12	30—35	52.00	52.65	52.11	49.92	56.28	53.87	41.53	30.89	36.39	41.34	34.16	40.28
13	35—40	51.13	49.59	50.51	47.21	52.01	49.84	37.02	34.85	33.02	44.89	31.48	38.14
14	40—45	44.67	46.74	45.81	41.40	55.95	49.29	34.64	31.04	33.77	40.85	36.07	29.02
15	45—50	46.20	46.83	46.46	48.33	53.47	49.13	32.18	27.10	32.19	27.30	30.32	34.94
16	50—55	48.15	47.04	47.49	49.32	44.00	45.29	31.18	24.57	28.50	44.37	27.13	33.00
17	55—60	43.46	45.20	44.39	46.94	42.11	44.48	28.86	27.36	25.67	32.69	28.72	27.61
18	60—65	45.02	50.29	42.58	46.62	45.35	46.20	25.65	23.11	24.91	30.38	33.82	32.19
19	65—70	40.35	37.54	39.05	46.28	42.94	45.56	29.04	19.05	24.08	26.01	23.86	24.34
20	70—75	35.29	39.27	36.79	40.73	39.13	39.35	22.18	16.45	20.67	30.52	29.52	30.09
21	75—80	42.66	32.43	34.63	40.66	38.38	39.55	21.02	18.39	17.77	26.56	22.57	25.13
22	80—85	32.34	30.07	31.25	34.77	33.96	35.15	15.85	16.18	17.45	24.32	20.30	20.05
23	85—90	30.62	34.35	32.02	42.06	33.54	36.83	15.68	13.30	15.64	19.10	18.72	18.59
24	90—95	27.84	27.59	27.95	30.87	31.14	30.71	12.95	11.78	13.30	15.31	14.39	15.09
25	95—100	13.91	19.44	16.58	16.61	18.09	17.91	10.40	6.62	7.37	10.26	9.39	9.28
26	96	26.59	25.70	25.56	24.97	22.65	23.29	16.66	8.21	9.50	14.75	13.87	13.64
27	97	17.92	18.97	23.37	25.18	27.53	25.48	10.88	7.90	8.70	13.16	12.34	11.99
28	98	18.28	27.47	18.85	18.45	24.46	18.44	8.91	6.21	9.43	8.43	8.35	9.61
29	99	14.49	18.61	16.02	15.43	16.02	13.48	8.70	6.82	6.15	8.20	8.17	7.63
30	100	6.97	13.57	9.94	7.69	9.29	7.53	7.41	5.08	5.77	2.76	9.99	8.02
31	0—50	49.28	50.25	49.68	51.02	56.36	53.54	37.90	35.86	36.56	40.11	40.09	40.27
32	50—100	28.78	31.80	30.29	36.34	34.36	35.16	18.40	14.44	16.31	21.60	19.77	20.47
33	0—100	34.56	36.67	35.36	41.56	40.97	40.56	24.33	19.32	21.41	26.58	24.88	25.66
no. of s. villages/blocks		353	353	706	(462)	(462)	(924)	(238)	(228)	(466)	(585)	(583)	(1168)
no. of s. households		931	938	1869	728	738	1466	224	223	447	237	252	489