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WP: 292

# Working Paper

SOME ASPECTS OF THE STRUCTURE  
OF CONSUMER DEMAND FOR  
FOODGRAINS IN INDIA

By

P.S. George

WP292



WP

1979/292

IIM  
WP-292



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W P No. 292  
Sept. 1979

WP292

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(292)

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INDIAN INSTITUTE OF MANAGEMENT  
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Revised - August, 1979

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P.S. GEORGE

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## SOME ASPECTS OF THE STRUCTURE OF CONSUMER DEMAND FOR FOODGRAINS IN INDIA

### Introduction

Historically, empirical studies on consumer demand for foodgrains have been carried out with a view to achieve one or other of two broad objectives: (1) to develop appropriate causal relationship that can be used to forecast prices or quantities demanded and (2) to approximate the demand curves of economic theory<sup>1/</sup>: The procedure adopted in such studies involves the specification of a demand equation and the estimation of the coefficients of the equation using data from time series or cross section surveys.

Time series data on consumption of foodgrains<sup>2/</sup> in India correspond to an indirect estimate derived from an accounting identity of total availability<sup>3/</sup>. This indirect estimate of food consumption has a number of limitations on account of the exclusion of changes in private stock, a constant proportion of production being considered as allowance for non-food use and the drawbacks in the gross production estimates.

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<sup>1/</sup> A review of the evolution of empirical studies on consumer demand is available in P.S. George and G.A. King "Consumer Demand for Food Commodities in the United States with Projections for 1980", Giannini Foundation Monograph 26, University of California, 1971.

<sup>2/</sup> In most of the government sources of data, foodgrains include cereals and pulses, with pulses accounting for about 10% of total foodgrains. Throughout this paper foodgrains refer to only cereals.

<sup>3/</sup> The total availability of foodgrains in a given period is defined as net availability = Gross Production minus allowance for non-food use plus net imports plus or minus changes in government stock.

Direct estimates of consumption of foodgrains and consumer expenditure are available from nationwide consumer surveys carried out periodically by the National Sample Survey Organization, (NSS). Any large scale sample survey on household consumption pattern with an all-India coverage, such as the NSS consumption data, is likely to introduce some errors<sup>1/</sup>. However, considering the problems involved in the derivation of consumption estimates from available time series data, the direct estimates obtained from NSS provides a more reliable source for analyzing the structure of consumer demand in India and the nature of structural changes in consumption pattern. In particular, the direct estimates obtained from cross section data over time can be used to analyse the variations in consumption levels according to the socio-economic characteristics of the population. The aggregate nature of information from time series data do not permit such a detailed analysis. Keeping this in mind this study uses the data from the 17th round NSS survey during 1961/62, 19th round during 1964/65 and 28th round during 1973/74 to analyse the changes in per capita consumption levels, consumer prices, and elasticities.<sup>2/</sup>

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<sup>1/</sup> For a detailed discussion on the reliability of NSS data see M.S. Ahluwalia "Rural Poverty in India: 1956/57 to 1973/74" in India: Occasional Paper, World Bank Staff Working Paper No. 279 (Washington, D.C.: The World Bank, 1978). See also P.S. George "Inequalities in Consumption - Some Problems of Measurement and Interpretation", IFPRI Staff Working Paper 77:33 (Washington, D.C., International Food Policy Research Institute), 1977, and Mukherjee M and Chatterjee G.S "On the validity of N.S.S Estimates of Consumption Expenditures" in Srinivasan and Burdhan "Poverty and Income Distribution in India", pp 139 - 147.

<sup>2/</sup> Here it should be pointed out that the data available from published reports corresponding to various NSS rounds are not strictly comparable, and this non-uniformity introduces some problems in analysing inter-temporal shifts in consumption pattern.

The changes in expenditure pattern and income distribution are analysed using data from these three rounds along with data from some other rounds where only per capita expenditure data are reported. The analysis also attempts to measure the impact of changes in consumer prices and per capita income on consumption levels. With a view to understand the structural characteristics on consumer demand, the difference in demand pattern according to urbanization, income groups and commodity composition of demand for foodgrains are considered in detail.

### Changes in Per Capita Consumption

Rural Areas: Between 1961/62 and 1973/74 NSS rounds, the per capita monthly consumption of all cereals in rural areas declined from 17.53 Kgs to 15.09 Kgs indicating a fall of 13.9%. As indicated in Table 1, this fall in cereal consumption was the net result of a decline in the consumption levels of rice (21.3%), Jowar (16.1%), and other cereals (45.5%); and an increase in the consumption levels of wheat (33.4%) and bajra (43.9%).

The NSS data for different Survey rounds are reported according to current expenditure classes. The boundaries of the class internal for different Survey rounds are not strictly comparable<sup>1/</sup>. Because of this difficulty in comparing the per capita consumption level of one expenditure class of 1961/1962 with the corresponding expenditure class of 1973/74, the consumption levels of consumers belonging to the bottom and top quartile expenditure groups were derived<sup>2/</sup>. The derived consumption levels indicated a slight

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<sup>1/</sup> For example, the first expenditure class in 1961/62 Survey is Rs.0-8 and the first expenditure class in 1973/74 survey is Rs.0-13. These two expenditure classes are not strictly equivalent.

<sup>2/</sup> Since the expenditure classes corresponding to these quartiles were not exactly the same as the expenditure groups corresponding to the NSS Data, some approximations were necessary to identify the expenditure classes corresponding to each quartile. Throughout this paper, the bottom quartile refers to the consumers in the lowest 25% expenditure categories and the top quartile refers to the consumers in the highest 25% expenditure categories.



TABLE 1: PER CAPITA MONTHLY CONSUMPTION OF CEREALS IN RURAL AREAS;  
1961/62 to 1973/74

<u>Bottom Quartile</u>	<u>Per Capita Monthly Consumption</u>			<u>Change Between</u>
	<u>1961/62</u>	<u>1964/65</u>	<u>1973/74</u>	<u>1961/62 to 1973/74</u>
		(kilograms)		(percent)
Rice	5.62	5.82	4.93	-12.3
Wheat	1.11	1.33	1.76	58.6
Jowar	2.01	1.74	1.75	-12.9
Bajra	0.51	0.56	0.83	62.7
Other cereals	2.08	2.39	2.04	- 1.9
Total cereals	11.19	11.84	11.31	1.1
<u>Top Quartile</u>				
Rice	11.48	10.23	8.87	-22.7
Wheat	5.99	5.58	6.54	9.2
Jowar	2.03	1.89	1.35	-66.5
Bajra	1.16	1.80	1.54	32.8
Other cereals	3.53	2.52	2.00	-43.3
Total cereals	24.19	22.02	20.30	-16.1
<u>All Consumers</u>				
Rice	8.77	8.13	6.90	-21.3
Wheat	2.64	2.74	3.52	33.4
Jowar	1.93	1.85	1.62	-16.1
Bajra	0.82	1.06	1.18	43.9
Other cereals	3.37	2.41	1.87	-45.5
Total cereals	17.53	16.19	15.09	-13.9

increase (1.1%) in the consumption of cereals in the bottom quartile and a fall of 16.1% in the top quartile. However, when the period from 1964/65 to 1973/74 is considered, a fall in consumption levels was experienced in both the bottom and top quartiles. Consumers belonging to both the bottom and top quartiles had made reductions in the per capita consumption of rice, Jowar, and Bajra. The reduction in consumption levels of these items was totally compensated in the bottom quartile by increase in consumption levels of wheat and bajra, but it was only partially compensated in the top quartile. Here it is also worth pointing out that the percentage increase in wheat consumption in the bottom quartile was much higher than the corresponding increase in the top quartile, and this may be due to the substantially higher initial level of wheat consumption in the top quartile as compared to the bottom quartile.

The changes in the consumption levels in the bottom and top quartiles had also contributed towards some reductions in quartile consumption ratio<sup>1/</sup>. While the quartile consumption ratio for all cereals was 2.16 during 1961/62, it was reduced to 1.86 during 1964/65 and to 1.79 during 1973/74. The reductions in quartile consumption ratio were observed for all cereal items; for rice from 2.04 to 1.80, for wheat from 5.40 to 3.72, for jowar from 1.01 to 0.77, for bajra from 2.27 to 1.83 and for other cereals from 2.16 to 1.79.

Urban Areas: Between 1961/62 and 1973/74, the per capita monthly consumption of all cereals in urban area declined by 9.2% from its 1961/62 level

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<sup>1/</sup> The quartile consumption ratio is defined as  $q_1/q_2$ , where  $q_1$  is the per capita consumption in the top quartile and  $q_2$  is the per capita consumption in the bottom quartile.

of 12.47 Kgs. This decline in total cereal consumption was the net result of a decline in the consumption of rice (12.4%), jowar (28.3%) and other cereals (53.6%); and an increase in the consumption levels of wheat (5.4%) and bajra (29.4%) (see Table 2).

Between the bottom and top quartiles the fall in per capita consumption in the top quartile was higher than the corresponding fall in the bottom quartile. Although the per capita consumption of cereals in the top quartile diminished by 15.1%, the consumption in the bottom quartile had diminished by only 6.5%. All commodities experienced a decline in consumption levels in the top quartile, but in the bottom quartile, the decline in consumption levels was confined to rice, jowar and other cereals. As indicated in Table 2, the per capita consumption of consumers belonging to the top quartile, and of the total population declined during the subperiods 1961/62 to 1964/65 and 1964/65 to 1973/74. However, in the bottom quartile, the fall in per capita consumption during 1961/62 to 1964/65 was partially offset by a slight increase in consumption during 1964/65 to 1973/74.

The quartile consumption ratio of cereals declined marginally from 1.27 in 1961/62 to 1.24 in 1964/65 and it further declined to 1.15 in 1973/74. The decline was observed for all commodities - rice from 1.57 in 1961/62 to 1.26 in 1973/74, wheat from 1.86 to 1.66, jowar from 0.27 to 0.24, bajra from 1.17 to 0.25 and other cereals from 0.31 to 0.30.

A comparison of the food consumption pattern in the urban and rural areas indicate some interesting results. In rural areas coarse grains accounted for about 1/3 of the cereal consumption. From 1961/62 to 1973/74, the share of coarse grains has slightly declined from 34.9% to 30.9%. In urban areas, coarse grains accounted for less than half its share in rural areas. Here again, there was a fall in the share of coarse grains from 17.9% during 1961/62 to 14.3% during 1973/74.

TABLE 2: PER CAPITA MONTHLY CONSUMPTION OF CEREALS IN URBAN AREAS; 1961/62 to 1973/74

	<u>1961/62</u>	<u>1964/65</u>	<u>1973/74</u>	<u>Change Between 1961/62 TO 1973/74</u>
<b>Bottom Quartile</b>		(Kilograms)		(percent)
Rice	4.60	4.39	4.48	-2.6
Wheat	3.16	3.50	3.18	0.6
Jowar	1.76	1.10	1.27	-27.8
Bajra	0.24	0.44	0.63	162.5
Other cereals	0.96	0.52	0.46	-52.1
Total cereals	10.72	9.95	10.02	-6.5
<b>Top Quartile</b>				
Rice	7.22	5.92	5.64	-21.9
Wheat	5.29	5.74	5.28	- 1.2
Jowar	0.48	0.33	0.30	-37.5
Bajra	0.28	0.17	0.16	-42.9
Other cereals	0.30	0.16	0.14	-53.7
Total cereals	13.57	12.32	11.52	-15.1
<b>All Consumers</b>				
Rice	6.14	5.61	5.38	-12.4
Wheat	4.10	4.43	4.32	5.4
Jowar	1.20	0.78	0.86	-28.3
Bajra	0.34	0.42	0.44	29.4
Other cereals	0.69	0.41	0.32	-53.6
Total cereals	12.47	11.65	11.32	- 9.2

The share of coarse grains for consumers belonging to the bottom quartile in urban areas was somewhat similar to the share of coarse grains for the consumers belonging to the top quartile in rural areas. The share of coarse grains for consumers belonging to the top quartile in rural areas was more than half the corresponding share in the bottom quartile in rural areas. However the share of coarse grains for consumers belonging to the top quartile in urban areas was only about 1/4 of the corresponding share in the bottom quartile in urban areas.

The rural-urban per capita consumption ratio of cereals declined from 1.41 during 1961/62 to 1.39 during 1964/65 and it further declined to 1.33 during 1973/74. The behaviour of this ratio in the bottom and top quartiles indicates that most of the adjustments had taken place in the middle quartiles (second and third quartiles) <sup>1/</sup>.

The per capita consumption data also indicated that the average per capita consumption for all consumers in the urban areas remained more or less the same as the per capita consumption of cereals in the bottom quartile among the rural consumers. However, the composition of superior and inferior grains in total cereals in these two categories differed very much.

#### Changes in Consumer Prices

The expenditure and quantity data available from consumer surveys provide a basis for drawing some inference on the behavior of consumer prices, especially the difference in price paid by consumers belonging to different

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<sup>1/</sup> This is mainly because the ratio remained at somewhat constant levels in the top quartile (1.78, 1.79 and 1.76 respectively during 1961/62, 1964/65 and 1973/74) and it increased in the bottom quartile from 1.04 during 1961/62 to 1.19 during 1964/65 before dropping to 1.13 during 1973/74.

expenditure groups. Data from the 1961/62, 1964/65 and 1973/74 NSS rounds are used to analyse the following:

- (1) Urban - rural differences in prices paid by the consumers
- (2) Difference in prices paid by consumers belonging to different income groups, and
- (3) Changes in prices over time for both urban and rural consumers.

#### Urban - Rural Price Differentials.

The Urban-rural price differentials are influenced by three major factors; handling costs and marketing margins, composition and quality differences among cereals, and extent of public distribution arrangements. These three factors influence the urban-rural price difference in somewhat different directions. The effect of handling costs and marketing margins is to raise the urban consumer prices over the rural prices. The higher proportion of the coarse grains in the rural diet has an influence of reducing the weighted prices of foodgrains in rural areas, and thereby widening the gap between urban and rural prices.<sup>1/</sup> At the same time, the subsidized public distribution system, mostly in the urban areas, reduces the urban prices, and thereby narrows down the gap between urban and rural prices.

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<sup>1/</sup> As pointed out earlier, the proportion of coarse grains in total foodgrains during 1961/62 survey was 34.9 per cent and 17.9 per cent in rural and urban areas respectively. During 1964/65 survey, this percentage was 32.9 in rural areas and 13.8 in urban areas. By 1973/74, the coarse grains accounted for 30.9 percent of total cereals in the rural areas and 14.3 percent in urban areas.

The prices paid by consumers in urban and rural areas obtained from 1961/62, 1964/65 and 1973/74 NSS data (Table 3) indicate that the combined positive influence of the first two factors on the gap between urban and rural prices for total cereals was higher than the negative influence of the third factor. The urban price of cereals was 16 percent above the rural price during 1961/62, it went down to 6 percent during 1964/65, and it went up to 10 percent during 1973/74. The lower percentage gap during 1964/65 was mainly influenced by the behavior of wheat prices. Wheat, accounting for 38% of the total cereals consumed in urban areas, was the major commodity distributed through the public distribution system. The consumer price of wheat for urban consumers during 1964/65 was 6 percent below the price of wheat for rural consumers, and this indicates that the marketing margins on local wheat was more than offset by the lower prices of wheat distributed through the public distribution system. The impact of the public distribution system can also be observed during 1973/74 when the wheat price in urban areas was only about 5% above the rural price, as compared to an average difference of 10% for all cereals, while the price of all cereals in rural areas went up by 40% from 1961/62 to 1964/65, in urban areas the increase was only 28%. Also, between 1961/62 to 1964/65, in urban areas the increase was only 28%. Also, between 1961/62 and 1973/74, the price of cereals in rural areas went up by 210% as against an increase of 195% in urban areas. Thus, throughout this period the price increase in urban areas remained below the rate of increase in rural areas.

#### Difference in Consumer Prices Among Income Groups

The procedure used to determine consumer expenditure in the cross section surveys often assumes that the price of a given commodity remains constant for all consumers. However, the cereal prices for consumers belonging to different income groups are likely to be influenced by the

TABLE 3: CONSUMER PRICES OF CEREALS IN URBAN AND RURAL AREAS

	1961/62			1964/65			1973/74		
	Rural	Urban	Urban- Rural Ratio	Rural	Urban	Urban- Rural Ratio	Rural	Urban	Urban- Rural Ratio
	(Paiso/Kg)	(Paiso/Kg)	(Per Cent)	(Paiso/Kg)	(Paiso/Kg)	(Per Cent)	(paiso/Kg)	(paiso/Kg)	(Per cent)
Rice	58	67	116	77	84	109	181	196	108
Wheat	47	51	108	66	62	94	139	146	105
Jowar	38	43	113	58	64	110	127	137	108
Bajra	41	47	113	60	67	112	114	130	114
Other Cereals	37	41	111	56	61	109	120	131	109
Total Cereals	49	57	116	59	73	106	152	168	110



1. Quality of different commodities;
2. Mode of purchases (frequency, location, bulk...);
3. Composition of different commodities in total cereals; and
4. Extent of purchases from public distribution system.

In order to study the variations in prices among consumers belonging to different income groups, the prices paid by the consumers belonging to the bottom and top quartiles were obtained from 1961/62, 1964/65 and 1973/74 data. The prices for cereal items presented in Appendix 1, and a summary for total cereals given in Table 4, lead to the following broad conclusions: 1/

1. The price of all cereals for consumers in the top quartile was substantially higher than the price for consumers in the bottom quartile in both urban and rural areas.

2. Between the urban and rural consumers, the ratio between the prices in the top and the bottom quartiles in the urban areas was higher than the corresponding ratio in the rural areas. If the price difference between the top and bottom quartile is assumed to be an indicator of the quality difference, the quality difference in grains was more predominant in urban areas than in rural areas.

3. The urban-rural price ratio in the top quartile was higher than the corresponding ratio in the bottom quartile. As pointed out earlier, the quality difference in grains leads to a higher quartile ratio in urban areas than in rural areas. At the same time, because of the operations of the public distribution system, the difference between the urban and rural prices for consumers belonging to the bottom quartile is less than the corresponding difference for the consumer belonging to the top quartile.

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1/ In the absence of a satisfactory income/expenditure group price index, it is not possible to verify whether the changes obtained on the basis of the cross section data is constant with time series

TABLE 4: CONSUMER PRICE OF ALL CEREALS IN THE BOTTOM AND TOP QUARTILE EXPENDITURE GROUPS

	<u>Bottom Quartile</u>	<u>Top Quartile</u>	<u>Quartile Price Ratio</u>
1961/62	(Paise/Kg)		
Urban	54	64	1.18
Rural	50	52	1.04
Urban-Rural Price Ratio	1.08	1.23	
1964/65			
Urban	65	78	1.20
Rural	64	74	1.16
Urban-Rural Price Ratio	1.02	1.05	
1973/74			
Urban	132	187	1.42
Rural	133	163	1.22
Urban-Rural Price Ratio	0.99	1.15	

This is mainly because the open market price of foodgrains remained at a higher level than the ration price, and most of the consumers belonging to the top quartile tend to purchase grains from the open market.

4. There were changes in the quartile price ratio and urban-rural price ratio from 1961/62 to 1973/74. During this period for the consumers belonging to the bottom quartile, the urban-rural price ratio showed a continuous decline from 1.08 during 1961/62 to 1.02 during 1964/65 and it further declined to 0.99 during 1973/74. For the consumers belonging to the top quartile, there was a mixed trend, a decline from 1.23 during 1961/62 to 1.05 during 1964/65 and then an increase to 1.15 during 1973/74. The quartile price ratio had an increasing trend in both urban and rural areas. However, the rate of growth in quartile price ratio between 1964/65 to 1973/74 in urban areas was much higher than the corresponding rate of growth in rural areas. A partial explanation for this difference is provided by the changes in the composition of commodities, especially the changing share of coarse grains in total cereals.

5. It was pointed out earlier that the operations of the public distribution system resulted in lower wheat prices in the urban areas as compared to rural areas. The price of cereals paid by consumers belonging to the bottom and top quartiles given in Appendix/indicates that during 1961/62, wheat price in urban areas was higher than the wheat price in rural areas for all consumers. However, as the public distribution of wheat expanded in urban areas through PL 480 supplies, wheat price in urban areas had fallen below the price in rural areas. By 1973/74, price of wheat for consumers belonging to the bottom quartile in urban areas was below the price of wheat for <sup>rural</sup> consumers in the bottom quartile. However, in the top quartile, price of wheat in urban areas was higher than the price in rural areas. Thus it can be concluded that the urban low income consumers derived the benefits of the public distribution system.

### Changes in Consumer Prices Over Time

Earlier some observations in the changes in consumer prices between 1961/62 and 1973/74 were made in connection with the relative price changes among the consumers belonging to the bottom and top quartiles. As Table 5 indicates, further analysis of this aspect indicates that between these two periods, the consumer price of cereals increased by 210% in rural areas and by 195% in urban areas. When the period 1961/62 to 1973/74 is subdivided into 1961/62 to 1964/65 and 1964/65 to 1973/74, the nature of changes in rural and urban areas during these two periods indicate different trends. During the period 1961/62 to 1964/65, the increase in price of cereals in rural areas exceeded the corresponding increase in urban areas. However during the period 1964/65 to 1973/74, a reverse trend was observed so that the increase in cereal price in rural areas was less than the corresponding increase in urban areas. One of the major factors responsible for the difference between the price increase in rural and urban areas is the nature of changes in wheat price. From 1961/62 to 1964/65, the price of wheat increased by 49% in rural areas as against an increase of 22% in urban areas. However, from 1964/65 to 1973/74, the price of wheat in rural areas went up by only 111% as against an increase of 135% in urban areas. The difference in the growth rate in price of wheat in urban and rural areas can be explained by the price of wheat supplied through the public distribution system. On the one hand, the issue price of wheat was a low rate of Rs.37.51 per quintal<sup>1/</sup>, during 1964/65, and on the other hand, during 1973/74 the issue price of wheat was increased from Rs. 84 to Rs. 96 in November 1973 and from Rs. 96 to Rs.125 in April 1974.

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<sup>1/</sup> 1 quintal = 100 Kgs.

TABLE 5: INCREASE IN CONSUMER PRICE OF CEREALS FROM  
1961/62 to 1973/74

	<u>From 1961/62 to 1964/65</u>	<u>From 1964/65 to 1973/74</u>	<u>From 1961/62 to 1973/74</u>
(a) Rural Areas		(Percent)	
Rice	33	135	212
Wheat	40	111	196
Jowar	53	119	234
Bajra	46	90	178
Other Cereals	51	114	224
All Cereals	41	120	210
(b) Urban Areas			
Rice	25	133	193
Wheat	22	135	186
Jowar	49	111	219
Bajra	43	94	177
Other Cereals	49	130	220
All Cereals	28	130	195

### Changes in Per Capita Expenditure

The changes in per capita expenditure over time reflect the changes in both the quantities consumed and the general price levels. The changes in quantities, as explained by demand theory, are influenced by the changes in income levels, relative prices, and consumer preference. The changes in per capita expenditure on individual commodities has an effect on the relative importance of these commodities as measured by their expenditure proportion.<sup>1/</sup>

As Table 6 indicates, between 1961/62 and 1973/74 the per capita monthly expenditure at current prices in rural areas went up by 144%. However, when the changes in consumer price index for agricultural labourers were used as an indicator of the price changes in rural areas, it was observed that the prices increased at a much higher rate than the increase in consumer expenditure.<sup>2/</sup>

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<sup>1/</sup> The expenditure proportion for a given commodity measures the share of total consumer expenditure spent on that commodity. Thus, the expenditure proportion on *i*th commodity is defined as  $w_i = a_i/E$  where  $a_i$  is expenditure on *i*th commodity and  $E = \sum a_i$  is the total expenditure.

<sup>2/</sup> In situations involving deflators, there can be difference of opinion regarding the appropriate deflator. As Burdhan points out, it is highly improper to deflate private consumer expenditure data by the deflator for national income. Further since there is some difference in the pattern of price movements between urban and rural areas, it is appropriate to deflate consumer expenditures in rural areas with a consumer price index for the rural area. In the absence of a separate consumer price index for rural areas, the consumer price index for agricultural labourers is taken as the best approximation for the changes in consumer prices in rural areas.

TABLE 6: CHANGES IN PER CAPITA MONTHLY CONSUMER EXPENDITURE AND EXPENDITURE PROPORTIONS IN RURAL AREAS: 1955 TO 1973/74.

(a) Consumer Expenditure

<u>Items of Expenditure</u>	<u>Per Capita Monthly Expenditure</u>					<u>Increase between 1961/62 to 1973/74 (percent)</u>
	<u>1955</u>	<u>1961/62</u>	<u>1963/64</u> (Rupees)	<u>1964/65</u>	<u>1973/74</u>	
Rice		5.06	5.19	6.28	12.46	146.2
Wheat		1.23	1.37	1.80	4.90	298.2
Jowar		0.73	0.76	1.08	2.06	182.2
Bajra		0.34	0.40	0.64	1.34	294.0
Other cereals		1.24	1.23	1.35	2.24	83.0
All cereals	5.71	8.60	8.95	11.15	23.00	167.4
Total food	10.10	14.93	15.72	19.29	39.70	165.9
Total non-food	5.10	5.80	6.69	7.15	13.31	95.7
All commodities	15.20	21.73	22.41	25.44	53.01	143.9
Consumer Expenditure at 1961/62 price		21.73	19.56	19.18	18.83	- 13.3

(b) Expenditure proportions

(Per Cent)

Rice		23.3	23.2	23.6	23.5
Wheat		5.6	6.1	6.8	9.2
Jowar		3.4	3.4	4.1	3.9
Bajra		1.6	1.8	2.4	2.5
Other cereals		5.7	4.7	5.1	4.2
All cereals	37.6	39.6	39.1	42.2	43.4
Total food	66.4	68.7	70.1	73.0	74.9
Total non-food	33.6	31.3	29.9	27.0	25.1
All Commodities	100	100	100	100	100

The consumer expenditure at constant prices during 1973/74 indicated a decline of 13.9% from the 1961/62 level. As pointed out in Table 6 most of this decline occurred between 1961/62 to 1963/64. However the declining trend was common for all other intermediate years for which data are available. Among the individual cereal items, the increase in monthly per capita expenditure between 1961/62 to 1973/74 in rural areas was maximum for wheat (298.2%), followed by bajra (294.0%), and was least for other cereals (83%). For all cereals per capita consumer expenditure went up by 167.4% and the food expenditure increased by 165.9%.

The relatively larger increase in the consumer expenditure on cereals and food items implied an increase in their share of the total consumer expenditure. Between 1961/62 to 1973/74, the expenditure proportions on cereals went up from 39.6% to 43.4% and the share of all food items went up from 68.7% to 74.9%. This tendency of increased share of cereals and all food items in total expenditure is also consistent with the changes from 1955. The increase in expenditure share of all cereals reflected a substantial increase in the share of wheat; marginal increases for rice, jowar and bajra and a decline in the share of other cereals. However, during the period 1964/65 to 1973/74, the expenditure share of wheat indicated a substantial increase, while the expenditures shares on rice, jowar and other cereals declined.

The monthly per capita consumer expenditure at current prices in urban areas increased from Rs. 30.86 during 1964/65 to Rs. 70.77 during 1973/74 (Table 7). The increase in money expenditure 129.3% was less than the increase in the working class consumer price index (which is used to represent the increase in general price levels in urban areas), indicating a 9.7% fall in consumer expenditure at constant prices. The fall in real consumer expenditure was experienced throughout the period but the rate of decline from 1961/62 to 1964/65 was higher than the rate of decline from



TABLE 7: CHANGES IN PER CAPITA MONTHLY CONSUMER EXPENDITURE AND EXPENDITURE SHARES IN URBAN AREAS: 1955 TO 1973/74.

(a) Consumer Expenditure						
Items of Expenditure	<u>Per Capita Monthly Expenditure</u>					Increase Between 1961/62 to 1973/74 (Percent)
	1955	1961/62	1962/64 (Rupees)	1964/65	1973/74	
Rice		4.13	4.09	4.75	10.56	155.7
Wheat		2.10	2.29	2.75	6.30	200.0
Jowar		0.51	0.45	0.50	1.18	131.4
Bajra		0.16	0.21	0.26	0.57	256.2
Other cereals		0.28	0.30	0.25	0.42	50.0
All cereals	5.33	7.18	7.34	8.53	19.03	165.0
Total food	13.68	18.58	19.57	22.68	47.93	158.0
Total non-food	10.01	12.28	13.24	13.35	22.84	86.0
All commodities	23.69	30.86	32.81	36.03	70.77	129.3
Consumer Expenditure at 1961/62 price		30.86	29.37	28.64	27.87	- 9.7
(b) Expenditure proportions (Percent)						
Rice		13.4	12.5	13.2	14.9	
Wheat		6.8	7.0	7.6	8.9	
Jowar		1.6	1.4	1.4	1.7	
Bajra		0.5	0.6	0.8	0.8	
Other Cereals		1.0	0.9	0.7	0.6	
All cereals	22.5	23.3	22.4	23.7	26.9	
Total food	57.7	60.2	59.6	62.9	67.7	
Total non-food	42.3	39.8	40.4	37.1	32.3	
All Commodities	100	100	100	100	100	

Among the individual items of expenditure, from 1961/62 to 1973/74, the expenditure on all cereals went up by 165%. The increase in consumer expenditure was maximum for bajra (256%), followed by wheat (200%) and rice (156%); and it was least for other cereals (50%). The expenditure on all food items increased by 158%.

As in the rural areas, the large increase in consumer expenditure on food in general, and on cereals in particular, implied an increase in the share of these items in the total expenditure. In 1955 the expenditure proportion on cereals was 22.5%, and it increased to 23.3% during 1961/62 to 23.7% during 1964/65 and to 26.9% during 1973/74. Similarly the share of expenditure on all food items in the total expenditure increased from 57.7% in 1955 to 60.2% during 1961/62 to 62.9% during 1964/65 and to 67.7% during 1973/74. From 1961/62 to 1973/74, the expenditure shares increased for rice (from 13.4% to 14.9%), wheat (from 6.8% to 8.9%), jowar (from 1.6% to 1.7%) and bajra (from 0.5% to 0.8%); and it declined for other cereals from 1.0% to 9.5%. The nature of changes in the expenditure proportions of individual cereal items from 1961/62 to 1973/74 was also the same for the sub-period 1964/65 to 1973/74.

A comparison of the urban and rural growth in per capita expenditure and changes in the expenditure proportions of difficult items leads to the following observations:

First, the percent of increase in per capita expenditure on cereals from 1961/62 to 1973/74 in both urban and rural areas exceeded the percent of increase in per capita expenditure on total food. While the rate of growth of expenditures on all cereals and on food items in rural and urban areas were more or less comparable during the period from 1961/62 to 1973/74, the rate of growth in expenditure on cereals during the period from 1964/65 to 1973/74 in urban areas was higher than the corresponding growth in rural

Second, the share of expenditures on cereals and on all food items in total expenditure increased in both rural and urban areas. While in rural areas, the increase in expenditure on wheat was the major contributing factor, in urban areas both rice and wheat contributed to this increase.

#### Changes in Income Distribution

The changes in the distribution of households in different expenditure classes from 1955 to 1973/74 reflect two factors - an increase in the general price level and a general improvement in the income distribution of the families <sup>1/</sup>. A comparison of the changes in income distribution can be made only after isolating the influence of an increase in general price level on the reported distribution of households in different expenditure categories. Burk <sup>2/</sup> has suggested a procedure by which the reported distribution of households in different expenditure categories during one time period can be adjusted for price changes. Using Burk's procedure: the 1973/74 distribution was adjusted for price changes between the periods 1955 to 1973/74 and between 1964/65 to 1973/74.

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<sup>1/</sup> This is true only to the extent that changes in expenditure pattern reflect changes in income. Burdhan points out that since the current income is often subject to more transient factors, distribution of consumption expenditure is sometimes regarded as a better proxy for permanent income distribution. (See Burdhan: "Poverty and Income Distribution India" in Srinivasan and Burdhan, op.cit)

<sup>2/</sup> See Burk, M.C., Measures and Procedures for Analysis of U.S. Food Consumption, USDA Handbook 206, Washington, D.C., 1961. Also see George, P.S. and G.A. King, "Consumer Demand for Food Commodities in the United States with Projections for 1980", University of California Berkeley, 1971. Burk's procedure involved the following steps:

(1) Take the distribution of sample during 1973/74 and plot the percentage cumulative frequencies on the ordinary vertical axis of a semi-logarithmic paper against the upper class limit of each expenditure class taken along the logarithmic horizontal axis. (2) To adjust the distribution for the price changes between 1955 to 1973/74, move the curve obtained above to the left by the ratio of consumer price index during 1955 to that in 1973/74 separately for urban and rural areas. Similarly to adjust the distribution for the price changes between 1964/65 to 1973/74 move the curve to the left by the ratio of consumer price index during 1964/65 to that in 1973/74. (3) Read off the cumulative frequencies from the adjusted curves corresponding to 1955 and 1964/65 at the expenditure class limits. (4) Compare the actual distribution in 1955 with the distribution derived from 1973/74. If the actual percentage of consumers in a low income group is higher than

The results of this analysis are presented in Table 8 indicating the changes between 1955 to 1973/74 and Table 9 indicating the changes between 1964/65 to 1973/74. The following broad tendencies emerge from the analysis:

(1) Between 1955 to 1973/74, there has been some improvement in the income levels in rural areas, especially in the two bottom expenditure groups. In 1955, about 36% of the population belonged to the first two groups (monthly per capita expenditure less than Rs.11) and the corresponding percentage was reduced to about half this level in 1973/74. The reduction in these two groups had influenced an upward movement in the percentage of population belonging to all the subsequent expenditure groups.

(2) As compared to the substantial reduction in the percentage of rural population belonging to the first two groups during 1955 to 1973/74, the changes in urban areas were only marginal. Here the upward movement from the low income groups was less significant than the downward movement from the upper income groups.

(3) Between 1964/65 to 1973/74 the changes in the proportion of households belonging to different income groups in both the urban and rural areas did not indicate any definite pattern. However, it is possible to infer that the proportion of low income households in rural areas has slightly increased; for example, during 1964/65, 23% of the population had per capita monthly expenditure below Rs. 18, but the 1973/74 distribution adjusted for price changes has a corresponding percentage of 27.4, indicating some increase in the percentage of low income population. At the same time, distribution of households in the urban areas indicates a very slight improvement in urban income distribution. Thus, though the data for the rural and urban areas do not show any major changes in income distribution during 1964/65 to 1973/74, there is a clear evidence that the income distribution

TABLE 8 : DISTRIBUTION OF 1955 ACTUAL SAMPLE HOUSEHOLDS AND 1973/74 DISTRIBUTION ADJUSTED FOR PRICE CHANGES BETWEEN 1955 AND 1973/74

<u>EXPENDITURE GROUP</u> (%)	<u>Rural Areas</u>		<u>Urban Areas</u>	
	<u>1955 Actual</u> <u>Distribu-</u> <u>tion</u>	<u>Distribution</u> <u>Derived From</u> <u>1973/74</u>	<u>1955 Actual</u> <u>Distribution</u>	<u>Distribution</u> <u>Derived From</u> <u>1973/74</u>
	(Per Cent)	(Per Cent)	(Per Cent)	(Per Cent)
0-8	20.3	5.5	5.1	2.0
8-11	17.6	13.0	9.6	9.0
11-13	10.9	11.0	7.7	9.0
13-15	8.7	12.0	6.6	9.5
15-18	9.8	14.5	10.5	11.0
18-21	9.0	11.0	8.4	10.5
21-24	7.2	8.5	7.5	10.0
24-28	5.3	7.5	7.8	8.5
28-34	4.6	8.0	9.8	9.5
34-43	2.8	3.5	8.9	8.5
43-55	1.6	3.0	7.4	5.5
55 & Above	2.2	2.5	10.7	7.0

TABLE 9 : DISTRIBUTION OF 1964/65 ACTUAL SAMPLE HOUSEHOLDS AND 1973/74 DISTRIBUTION ADJUSTED FOR PRICE CHANGES BETWEEN 1964/65 AND 1973/74.

<u>Expenditure Group</u>  (%)	<u>Rural Areas</u>		<u>Urban Areas</u>	
	<u>1964/65 Actual Distribution</u>  (Per Cent)	<u>Distribution Derived From 1973/74</u>  (Per Cent)	<u>1964/65 Actual Distribution</u>  (Per Cent)	<u>Distribution Derived From 1973/74</u>  (Per Cent)
0-8	1.0	1.3	0.5	0.4
8-11	3.0	4.0	1.4	1.1
11-13	5.5	4.7	1.9	1.0
13-15	5.5	6.4	3.3	3.5
15-18	8.0	10.8	6.5	7.5
18-21	14.5	12.2	7.1	7.5
21-24	11.0	11.2	7.3	9.5
24-28	10.5	12.2	9.9	8.5
28-34	14.5	13.1	12.6	12.0
34-43	10.5	10.8	12.4	17.0
43-55	6.5	6.7	11.5	11.5
55-75	4.5	3.9	11.6	9.5
75 & Above	3.0	2.7	14.6	11.0

in rural areas has not improved, and at the same the distribution in urban areas has not deteriorated.

Changes in Elasticities

The changes in commodity composition and price levels has an impact on the expenditure elasticity and quantity elasticity. Since the difference between these two elasticities can be interpreted as a measure of the quality elasticity, it is also possible to analyze the changes in quality elasticity.<sup>1/</sup>

In order to obtain the expenditure and quantity elasticities in different expenditure groups the relationship between expenditure (and quantity) on cereals and total expenditure was estimated using the functional form <sup>2/</sup>

$$\log q = a + \frac{b}{x} + c \log x$$

where q = per capita expenditure on cereals or quantity consumed, and x = per capita total expenditure. From the estimated expenditure and quantity elasticities for different expenditure groups, the elasticities corresponding to the bottom quartile, top quartile and the total sample were obtained. The results of this analysis, summarized in Table 10, indicate the following broad changes in the elasticities.

From 1961/62 to 1973/74, for all consumers in rural areas, there had been a decline in the expenditure elasticity and quantity elasticity. However, since the decline in quantity elasticity was much higher than the decline in expenditure elasticity, there was an increase in the quality elasticity. Among the consumers belonging to the top quartile, the declines in expenditure elasticity and quantity elasticities were more or less the same, so that the quality elasticity remained the same. At the same time, for the consumers belonging to the bottom quartile, there was an increase in expenditure

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<sup>1/</sup> Expenditure elasticity = quality elasticity + quantity elasticity.

<sup>2/</sup> This functional form is chosen mainly because of its suitability for determining the elasticities at different total expenditure levels (see J.W. Mellor, "Agricultural Price Policy and Income Distribution in Low Income Countries"). When q corresponds to per capita expenditure, the function

TABLE 10: EXPENDITURE, QUANTITY AND QUALITY ELASTICITIES OBTAINED FROM 1961/62, 1964/65 AND 1973/74 SURVEYS

	Bottom Quartile			Top Quartile			All Consumers		
	1961/62	1964/65	1973/74	1961/62	1964/65	1973/74	1961/62	1964/65	1973/74
Rural Areas									
Expenditure elasticity	.720	.783	.847	.453	.425	.334	.545	.555	.517
Quantity elasticity	.704	.661	.668	.368	.351	.252	.482	.471	.354
Quality elasticity	.016	.122	.179	.085	.074	.082	.063	.084	.163
Urban Areas									
Expenditure elasticity	.540	.549	.685	.076	.029	.129	.238	.337	.395
Quantity elasticity	.403	.455	.492	-.024	-.044	-.011	.184	.253	.209
Quality elasticity	.137	.094	.193	.100	.073	.140	.054	.084	.186



elasticity and a fall in quantity elasticity resulting in an increase in quality elasticity.

In the urban areas, from 1961/62 to 1973/74, both the expenditure elasticity and quantity elasticity had increased. However, the increase in expenditure elasticity was higher than the increase in quantity elasticity resulting an increase in quality elasticity. While the expenditure elasticity increased during 1961/62 to 1964/65 and during 1964/65 to 1973/74, the quantity elasticity increased during 1961/62 to 1964/65, but declined during 1964/65 to 1973/74. For the consumers belonging to the bottom quartile, from 1961/62 to 1973/74, the expenditure elasticity and quantity elasticity had increased during both the subperiods, but the quality elasticity declined during 1961/62 to 1964/65. The decline in quality elasticity during 1961/62 to 1964/65 was more than offset by the increase during 1964/65 to 1973/74. All the elasticities for the urban consumers belonging to the top quartile had increased from 1961/62 to 1973/74, but the changes from 1961/62 to 1964/65 and from 1964/65 to 1973/74 were in the opposite direction.

Consistency of Changes in Consumption Levels with changes in Income and Prices

It was pointed out that the cross section data analysed here indicates a fall in per capita consumption of cereals. Since cereal prices and consumer incomes are two important variables influencing the per capita consumption of cereals, it was considered appropriate to analyse the influence of these two variables on the consumption levels. The analysis was carried out from two angles:

- (1) To estimate the price elasticity consistent with changes in quantities consumed and income levels. For this purpose, it was assumed that changes in cereal consumption was influenced only by price and income changes.<sup>1/</sup> When an income elasticity is assumed the price elasticity can be determined.

<sup>1/</sup> In this case, changes in quantity consumed is given by

$$\Delta q = a_y \Delta y + a_p \Delta p \quad \text{Where}$$

$\Delta q$ ,  $\Delta y$  and  $\Delta p$  correspond to changes in quantity, income and prices;  $a_y$  and  $a_p$  correspond to income and price elasticities.

(2) to estimate the extent to which changes in income and price levels can explain the changes in the quantities consumed. In this case, the income and price elasticities were assumed at certain levels and the extent of changes in consumption due to the changes in prices and income were estimated. The difference between the observed consumption level and the estimated consumption level could be attributed to other variables such as changes in relative prices of other commodities, income distribution and consumer preference.

As noted earlier, between 1961/62 and 1973/74, the per capita monthly consumption in urban areas declined from 12.47 kgs to 11.32 Kgs and in rural areas from 17.53 kgs to 15.09 kgs. During the same period the price per kilogram of cereals increased from Rs. 0.57 to Rs. 1.68 in urban areas, and it increased from Rs. 0.48 to Rs. 1.52 in rural areas. In order to compare the changes in per capita expenditures and the relative prices of cereals, the expenditures in 1973/74 was expressed in 1961/62 price levels using the consumer price index for urban and rural areas. Similarly the expenditure on cereals in 1973/74 was brought down to the 1961/62 price levels using the food price index <sup>1/</sup>. This analysis leads to the following conclusions:

1. To the extent changes in consumer expenditures based on NSS data reflect the changes in consumer income between 1961/62 to 1973/74, the real income declined by 9.7% in urban areas and 13.3% in

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<sup>1/</sup> In a strict sense, changes in cereal price index should have been used. However, since cereal price index was not available for urban and rural areas separately and since the cereals accounted for a major portion of food items, food price index was used.

rural areas <sup>1/</sup> .

2. Compared to the increase in general price levels, the real price of cereals increased by 7.1% in urban areas and by 106% in rural areas.

3. The reported fall in per capita consumption in urban areas (-9.2%) is consistent with an income elasticity of .21 and a price elasticity <sup>2/</sup> of - 1.0.

4. The fall in per capita consumption in rural areas was 13.9%. When the income elasticity of 0.41 is used, the implied price elasticity corresponding to the fall in cereal consumption in rural areas was - 0.80.

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<sup>1/</sup> It should be pointed out that this result is not consistent with the growth in per capita national income. The difference could be on account of the methodology used in determining the per capita national income at constant prices or because of the deflator used in the analysis. Srinivasan and others consider that the difference is on account of the deflators used. Commenting on the estimates of consumption at current prices from NSS and national accounts, they observe: "while the estimates of consumption at current prices derived from National Income and NSS data are in close agreement for the period 1954-55 to 1963-64, the estimates of real consumption differ substantially. This is essentially a reflection of the differences in the deflators used to adjust current price consumption for price changes. The National Income deflator implies a much slower increase in prices up to 1960-61 than the index applied to the NSS series. The latter is in principle superior because it approximates more closely to an index of consumer prices".

<sup>2/</sup> The price elasticity was derived from the changes in consumption levels, income levels and price levels using an income elasticity of .21 which corresponds to the average quantity elasticities during 1961/62 and 1973/74.

5. Since both the price elasticities implied in 3 and 4 above are somewhat higher than a priori expected levels, the changes in consumption levels consistent with a price elasticity of  $-.3$  in urban areas and  $0.5$  in rural areas were estimated.<sup>1/</sup> According to this estimate, the changes in income and price levels during 1961/62 to 1973/74 can explain about half the fall in consumption in urban areas and about  $3/4$  of the fall in rural areas.

The data used in arriving at the above conclusions appear in Appendix Table 13 and the results are briefly presented in Table 11.

Appendix Table 13 also gives break-up of the period 1961/62 to 1973/74 into two sub-periods 1961/62 to 1964/65 and 1964/65 to 1973/74.<sup>4</sup> In general the conclusions obtained for the total period were also true for the two sub-periods. However, in the urban areas, only a very small proportion of the fall in consumption levels between 1961/62 and 1964/65 can be explained through price and income changes. At the same time, it appears that a major portion of the fall in consumption levels in rural areas between 1961/62 and 1964/65 can be explained by these two variables. Between 1964/65 and 1973/74, the changes in price and incomes can explain about 60% of the fall in consumption levels in both urban and rural areas.

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<sup>1/</sup> For example, the National Council of Applied Economic Research had obtained a price elasticity of  $-.34$  for foodgrains in India. Considering the fact that price elasticity in rural areas is likely to be higher than the <sup>urban</sup> areas and that the estimated quantity elasticities in Table 10 are close to  $-.3$  and  $-.5$ , these levels are used.

TABLE 11: SUMMARY OF CHANGES IN INCOME, PRICE AND CONSUMPTION DURING 1961/62 TO 1973/74

	<u>Urban Areas</u>	<u>Rural Areas</u>
1. Change in consumer expenditure	-9.7%	-13.3%
2. Change in cereal consumption	-9.2%	-13.9%
3. Increase in cereal price	195%	210%
4. Increase in C.P.I.	154%	182%
5. Increase in Food Price Index	172%	212%
6. Increase in Food Price Relative to General Price	7.1%	10.6%
7. Quantity Elasticity	.21	.41
8. Price Elasticity consistent with (1), (2), (6), and (7)	-1.00	-0.80
9. Fall in consumption consistent with (1), (2), (6), (7) and price elasticity -.3 in urban areas and -.5 in rural areas	-4.2%	-10.8%
10. Percentage change in cereal consumption explained by (9)	43.5%	77.7%

### Conclusions and Policy Implications

While drawing conclusions from this study, it should be emphasised that the data used in the analysis and the partial nature of the analysis introduces a number of limitations. It is possible to question the validity of conclusions based on comparisons of data from a few end points. Though such comparisons cannot be used to analyse the underlying trends in consumption pattern, the rationale used in the study assumes that so long as the periods are not unusual, these comparisons can provide some indications of the change over the interval. The data from NSS used in this analysis is an important source of evidence for analysing the structural changes in consumption pattern. However, this data alone will neither provide any conclusive evidence on the factors influencing the change, nor lead to a set of viable policy options to affect further changes in the structure, particularly those affecting the consumption levels of low-income consumers. At the same time, the findings from this study can be used in conjunction with a number of other evidences on productivity, employment, and incomes to suggest policy measures to increase the food intake of consumers belonging to low-income groups.

The main conclusions of this study are listed below:

Between 1961/62 to 1973/74, the per capita consumption of cereals declined by 13.9% in rural areas and by 9.2% in urban areas. In rural areas, the consumption levels of cereals in the bottom quartile remained more or less constant, but the top quartile had made substantial reductions. In urban areas, there were reductions in all quartiles. Among the individual commodities, there was an increase in the per capita consumption of wheat and bajra in both rural and urban areas in all quartiles, except for the top quartile in urban areas. The data from 1964/65 consumption survey also confirms the declining tendency in per capita consumption.

a faster rate than the increase in general prices. However, the rate of increase of prices in urban areas remained below the rate in rural areas. Between the bottom and top quartile, the price of all cereals for consumers in the top quartiles was above the price for consumers in the bottom quartile. The urban-rural price ratio in the top quartile was higher than the corresponding ratio in the bottom quartile. The quartile price ratio increased in both the urban and rural areas. Among the individual commodities, bajra and wheat had relatively lower rate of increase in prices in both the urban and rural areas.

Although the total consumer expenditure at current prices had gone up in both urban and rural areas, when allowances were made for price increases, there was a fall of 13.3% in per capita expenditures in rural areas and 9.7% in per capita expenditures in urban areas. It was observed that the expenditure proportion on all cereals went up from 37.6% in 1955 to 43.4% during 1973/74 in rural areas, and from 22.5% in 1955 to 26.8% during 1973/74 in urban areas. Between 1961/62 to 1973/74, in both urban and rural areas, the expenditure proportions on rice remained more or less stable but the expenditure proportions on wheat had gone up substantially.

In the rural areas, there had been some improvements in the income levels of the poor between 1955 and 1964/65, but there was no appreciable change between 1964/65 and 1973/74. In urban areas, there had been only marginal changes during both the above periods.

Between 1961/62 and 1973/74 in rural areas there had been a decline in both expenditure elasticity and quantity elasticity, but an increase in quality elasticity of cereals. While the quality elasticity remained more or less constant for the top quartile, there had been an

all the elasticities increased.

The changes in income and price levels during 1961/62 to 1973/74 can explain about half the fall in per capita consumption of cereals in urban areas and about 3/4 of the fall in rural areas.

The above findings can be used to draw the following broad policy implications:

The changes in income and prices during 1961/62 to 1973/74 explains a major portion of the changes in consumption levels of cereals during this period. Whether or not these variables can explain the reported fall in per capita consumption in the subsequent years, despite increased agricultural production, needs careful analysis <sup>1/</sup>. An analysis of the consumer survey data from the 32nd round covering 1977/78 would probably provide an answer to this question.

The change in income distribution indicates no decline in the percentage of low income consumers, especially in rural areas between 1964/65 to 1973/74. Data for individual states analyzed elsewhere indicates that the situation is no different even in a state like Punjab where substantial agricultural growth has taken place during this period <sup>2/</sup>. Therefore it is important to analyze whether the observed absence of reduction in income inequalities is on account of the inability of achieving distributive justice through growth-oriented policies or because of the possibility that the process of raising income levels of low income consumers through growth linkages of agricultural development may involve a long gestation

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<sup>1/</sup> For a discussion of the nature of fall in per capita consumption in the subsequent years see, Sarma J.S and Roy. S, "Behavior of Foodgrain Production and Consumption in India, 1960-1977 (mimeo)

<sup>2/</sup> See Ahluwalia M.S. Rural Poverty in India: 1956/57 to 1973/74, World Bank Staff Working Paper No. 279: 1978.



period <sup>1/</sup>. Considering the high income elasticity of foodgrains for low income consumers, both from the point of view of increasing the consumption levels of the poor and from the point of raising the effective demand necessary for achieving sustained agricultural development, it is important to obtain a satisfactory answer to this question. An answer to this question will also suggest whether an agricultural development strategy can be relied upon as an effective measure for alleviating poverty or not.

The tendency among both urban and rural consumers belonging to the low income groups to increase the share of coarse grains in the total cereal consumption raises the interesting possibility of improving the nutrition levels of the low-income consumers. However, one could raise an objection to this on the ground that the choices under poverty conditions should not be taken as a basis for welfare programmes.

The observed constant levels of per capita consumption of low-income consumers in urban areas, inspite of a decline in per capita consumption in all other categories, can be interpreted as a measure of the success of public distribution of foodgrains in urban areas. The subsidized public distribution was mainly responsible for the relatively slow growth in consumer prices for the low income consumers in urban areas, and this slow growth could help them to maintain their consumption levels at the earlier levels.

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<sup>1/</sup> See Mellow J.W., The New Economics of Growth: A strategy for India and the Developing World, Ithaca, Cornell University Press, 1976.

APPENDIX TABLE 12: Consumer Price of Cereals for Consumers  
Belonging to the Bottom and Top Quartiles

	Consumer Prices					
	Urban areas			Rural areas		
	<u>bottom</u> <u>Quartile</u>	<u>Top</u> <u>Quartile</u>	<u>Quartile</u> <u>Price Ratio</u>	<u>bottom</u> <u>Quartile</u>	<u>Top</u> <u>Quartile</u>	<u>Quartile</u> <u>Price Ratio</u>
<u>1961/62</u>	(Paisa/Kg)	(Percent)	(Paisa/Kg)	(Per cent)		
Rice	63	73	116	54	60	111
Wheat	47	56	119	46	47	102
Jowar	41	45	110	36	38	106
Bajra	46	54	117	38	43	113
Other cereals	39	45	115	38	39	103
Total cereals	54	64	118	50	52	104
<u>1964/65</u>						
Rice	79	89	113	72	84	117
Wheat	55	69	125	59	70	118
Jowar	65	65	100	55	59	107
Bajra	61	76	124	57	60	105
Other cereals	56	60	107	52	62	119
Total cereals	65	78	120	64	74	116
<u>1973/74</u>						
Rice	170	231	136	155	201	130
Wheat	124	152	123	131	142	108
Jowar	126	145	115	112	137	122
Bajra	117	129	110	104	111	106
Other cereals				113	124	112
Total cereals	132	182	142	133	163	122

APPENDIX TABLE 13: DETAILS ON CHANGES IN INCOME, PRICES AND CONSUMPTION DURING 1961/62 TO 1973/74

	Urban Areas				Rural Areas			
	1961/62	1964/65	1973/74	1961/62	1964/65	1973/74	1961/62	1973/74
1. Per Capita Cereal Consumption(Kgs)	12.47	11.65	11.32	17.53	16.19	15.09		
2. Per Capita Expenditure on Cereals (Rs)	7.18	8.53	19.03	8.60	11.15	23.00		
3. Per Capita Total Expenditure (Rs)	30.86	36.03	70.27	21.73	26.44	53.01		
4. Cereal Price (Rs/Kg.)	0.57	0.73	1.68	0.49	0.69	1.52		
5. Consumer Price Index	128	161	325	103	143	290		
6. Food Price Index	128	166	348	103	148	322		
7. Consumer Expenditure at 1961/62 Price	30.86	28.64	27.87	21.73	19.04	18.83		
8. Change in Real Consumer expenditure	-7.2%	-2.5%		-12.38%	-1.3%			
9. Change in Cereal Consumption	-6.5%	-2.8%		-7.6%	-6.8%			
10. Increase in Cereal Price	28%	130%		41%	120%			
11. Increase in CPI	26%	102%		39%	103%			
12. Increase in Food Price Index	30%	110%		44%	118%			
13. Increase in Food Price Relative to General Price	3.2%	3.9%		3.6%	7.3%			
14. Quantity Elasticity (From Table 9)	.18	0.25	0.21	.48	0.47	0.35		
15. Price Elasticity Consistent with (8), (9), (13), (14)	-1.21	-0.56		-0.50	-0.85			
16. Fall in Consumption Consistent with (8), (9), (13), (14) and Price Elasticity -.3 in Urban and -.5 in Rural Areas	-2.5%	-1.75%		-7.6%	-4.18%			
17. Percentage Change in Cereal Consumption Explained by (16)	33.3%	62.3%		100%	61.5%			

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