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FARMER RESPONSE TO JUTE AND PADDY PRICES

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SUMMARY

The object of the study which is restricted to West Bengal is to examine the effect of the relative prices of raw jute and *aus* paddy on the area under jute. The period selected is 1958-59 to 1970-71. A graphical presentation of the area under jute and *aus* paddy for the State as a whole as well as the district of Cooch Bihar does not show any high correlation. Similar is the result when three different sets of price parities are plotted with one year's time lag against area under jute for the State as a whole. A linear regression analysis of different price parities (t—1) as independent variable and area under jute as dependent variable also shows the results to be insignificant at 5 per cent level. The results are, however, quite significant with rainfall. Even otherwise if we ignore exceptionally good and bad years, we find that changes in the area under jute are quite insignificant over the last ten years. A comparative study of the districtwise jute area as a percentage of the total area under jute and paddy as well as gross-return ratio between the two in the preceding year also shows that there is a drastic fall in the area under jute when returns from jute are more or less equal to or less than those of paddy. All this can at best be partially explained by the fact that there is a core area of 420-430 thousand hectares in West Bengal which, given normal weather conditions, will always remain under jute. The effect of price changes will then be only marginal.

SUPPLY RESPONSE FOR GROUNDNUT IN INDIA

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SUMMARY

Production of oilseeds is not keeping pace with demand for oilseeds and consequently their prices are soaring up. Therefore, there is need for increasing the production of oilseeds. But in order to have effective policy measures in this respect, knowledge of the coefficients of the factors affecting production of oilseeds in various regions of the country is necessary. With this objective in view an attempt has been made in this paper (1) to estimate the supply functions of groundnut for various States as well as for the country as a whole, and (2) to project the supply of groundnut in the next five years, *i.e.*, 1973-74.

Time-series data on area under groundnut, its price, prices of the competing crops and production were obtained from various published sources for the period 1953-54 to 1968-69. The linear regression models were used to estimate the supply functions. Current year's area was taken as dependent variable, and lagged year's price, lagged year's area, lagged year's price index of the competing crops, annual rainfall, and time trend were used as independent variables. The coefficients of these variables were estimated by least squares method.

The findings and conclusions of the study are presented below :

The estimates of own price and cross price elasticities of supply of groundnut are as shown in Table I.

TABLE I—PRICE AND CROSS PRICE ELASTICITIES OF SUPPLY OF GROUNDNUT BY STATES AND FOR ALL-INDIA

States	Own price $P_{1\,t-1}$	Price of the competing crops $P_{2\,t-1}$
1. Andhra Pradesh	0·3505**	—0·6093***
2. Madhya Pradesh	—0·2269***	—
3. Tamil Nadu	0·1499	—
4. Maharashtra-Gujarat	0·2433**	—
5. Mysore	—0·1124***	—0·0736†
6. Punjab	0·6032*	—0·4162†
7. Rajasthan	0·6156***	—
8. Uttar Pradesh	0·3072**	—0·1122***
9. All-India	0·2181†	—0·3995***

    *   Significant at 1 per cent level.
  **   Significant at 5 per cent level.
 ***   Significant at 10 per cent level.
  † Significant at 15 per cent level.

The table shows that the area under groundnut in Andhra Pradesh, Maharashtra-Gujarat, Punjab, Rajasthan and Uttar Pradesh indicates a significantly positive response to its price. Punjab and Rajasthan are especially highly sensitive to the preceding year's price. On the other hand, the area under groundnut in Madhya Pradesh shows significantly negative response to its price. With regard to the lagged year's area, only Punjab indicates significantly positive response for the area under groundnut whereas Tamil Nadu shows significantly negative response for the groundnut area to its lagged area. In general the equation fitted for the aggregated data for all-India shows negatively significant response to the price of the competing crops. This means that with a higher price of the competing crops the area under groundnut will decrease and vice versa.

The area under groundnut in Andhra Pradesh, Tamil Nadu, Rajasthan and Uttar Pradesh shows positive response to the production of the preceding year, whereas the groundnut area in Punjab shows a decline if the production in the previous year increases. Except Tamil Nadu, all other States show increasing trends in the area under groundnut. The aggregated data for all-India also shows a similar trend. The area under groundnut crop is expected to increase by 106 per cent, 51 per cent, and 42 per cent in Rajasthan, Uttar Pradesh and Madhya Pradesh respectively in the year 1973-74 over the base period of 1968-69.

FARMERS' SUPPLY RESPONSE

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SUMMARY

To test the hypothesis that farmers in under-developed countries are either indifferent or respond perversely to changes in prices, the present study was made in the Southern Region of Tamil Nadu comprising Madurai, Ramanathapuram and Tirunelveli districts. The study covered the period

from 1937-38 to 1966-67. The area under paddy was taken as proxy for the supply response of farmers. A distributed lag model of the following form was adopted.

$$Y_t = a + b_1 X_{1t-1} + b_2 X_{2t-1} + b_3 X_3 + b_4 X_4 + b_5 X_5$$

where the dependent variable, the area under paddy was Y_t. X_3, X_4 and X_5 were respectively gross irrigated area, area under sugarcane and area under banana in hectares. $X_{1\,t-1}$ and $X_{2\,t-1}$ were production of paddy in tonnes lagged one year and price in rupees per tonne of paddy lagged one year respectively. $b_1 \ldots \ldots b_5$ are partial regression coefficients.

From the analysis it was found that the production of paddy in the previous year ($X_{1\,t-1}$), price of paddy in the previous year $X_{2\,t-1}$ and area under sugarcane have negative but significant influence on the acreage under paddy in any one year. The gross area irrigated and the area under banana have positive influence on the area under paddy. Of all the factors, gross irrigated area is of considerable importance. This is understandable because of the nature of paddy cultivation and its dependence in the area of this study, upon the highly fluctuating flow irrigation rather than on stable underground water sources. The cumulative effect of all the factors which explained 97 per cent variation in acreage (*i.e.*, in turn supply response) of paddy to its price (since $R^2 = 0.97287$), is observed to be on a diminishing scale.

Therefore it may be conclusively stated that the farmers in the region studied, do respond to changes in prices. But supply of irrigation water sets a limit for expansion. Therefore it may be concluded that, whereas a negative response to price goes unrestricted, a positive response is limited by resource constraints, particularly water supply.

IMPACT OF PRICE POLICY ON PADDY GROWERS OF ASSAM

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SUMMARY

The Assam Co-operative Apex Marketing Society and the Food Corporation of India enjoy the monopoly right of procurement of paddy and rice under State trading. But during the period 1960-61 to 1968-69, these Government approved agents failed to achieve the target of procurement and in most of the years the procurement was less than 40 per cent of the actual target. The failure of procurement by the Government approved agents is due to the existence of unregulated open market of paddy and rice throughout the State. The private traders could manage flourishing trade by offering very high price to the growers and selling rice at high price in the urban centres.

A case study of 50 surplus paddy growers of Sibsagar district of Assam at the end of August, 1971, and a similar study carried out in 1967, revealed that the growers disposed of a major portion of their surplus to private agencies in the lean months at a very high price. Only a small portion of their surplus was disposed of in the post-harvest period for immediate cash needs. During 1966-67, the average price of paddy per maund in the open market was Rs. 22·74, against the Government procurement price of Rs. 13·50 only. The average open market price from mid-November, 1970 to August, 1971 was Rs. 73·22 per quintal (Rs. 27·33 per maund) in the open market, whereas the Government procurement price was Rs. 56·25 per quintal (Rs. 21 per maund). In such a situation it is but natural for the farmers not to sell their produce at a lower price. The case studies revealed that nearly 50 per cent of the paddy is sold to the private traders, 30 per cent to the co-villagers and only 12 per cent to the Government approved agents.

Rice is sold at a much higher price in the open market than the price of rice fixed by the Government and supplied through the fair price shops. This is because the supply of rice to the consumers through the fair price shops is inadequate and the quality of rice supplied is inferior. The price of coarse rice in the open market was varying from Rs. 1·40 to Rs. 1·50 per kilogram during June-August, 1971, as against the price of rice in the fair price shops at Rs. 1·17 per kilogram.

Thus the Government price policy could help neither the farmers nor the consumers. The realistic policy would be to fix the price on the basis of cost of production which is expected to be a compromise between the high open market price and the Government procurement price. After such a realistic fixation of price the open market should be effectively controlled.

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A STUDY OF TRENDS AND VARIATIONS IN THE PRICES OF FOODGRAINS IN BIHAR WITH SPECIAL REFERENCE TO PRICES OF CEREALS BETWEEN 1956 AND 1968

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SUMMARY

Bihar is a predominantly agricultural State, 76·8 per cent of her total working population being engaged in agriculture. In Bihar not only 77 out of every 100 workers are engaged in agriculture, but 72 out of these 77 workers are engaged in the production of food crops alone. Bihar's agricultural economy is overwhelmingly a food economy, and of her gross cropped area all but a paltry 5 per cent is devoted to the cultivation of non-food crops. Judged by the per capita production of foodgrains (367 lbs. as the all-India average), Bihar turns out to be a slightly deficit State with her per capita production of foodgrains of 326 lbs. In fact Bihar imported on an average (1959-62) at least 300 thousand tons of cereals (rice and wheat) annually from outside.

The present study has been undertaken to indicate any possible scope for price incentives to increase production of foodgrains in Bihar and to eliminate the deficits that account for imports from outside the State. The study reveals that the total cropped area has been increasing between 1956-67 with the exception of 1965-66, when the famine in Bihar affected adversely the area under cropping. Similar indications are made in the total output, where the production seems to have declined in 1966. The percentage variations in acreage and output indicate that the increase in acreage in one year or decrease in it is followed by an increase or decrease in the output in subsequent years. Further, an increase in the area (3·47 per cent in 1958) is followed by a substantial increase in output (16·96 per cent). Similarly, a decrease in area (4·53 per cent in 1957 and 7·15 per cent in 1966) is followed by a substantial decline in output (39·06 per cent and 21·20 per cent), respectively. This suggests that the expansion in area has a definite positive effect on the output of cereals. But, the price-production and price-acreage correlationships do not indicate the same trends. The prices of cereals have been continuously increasing from 1961-62. Yet the coefficient of correlation between price and output is —0·65, which indicates that the rise or fall in the prices of cereals has no positive effect upon the production of cereals. This may be because much of the crops produced is meant for household consumption or for exchange by barter. Similarly, the coefficient of correlation between prices and area is —0·13, indicating thereby that the expansion in acreage is not influenced by rise in prices. The climatic and rainfall conditions are stronger determinants of area and output in comparison to prices. This shows that even if the price incentive is given the area under cereals, on the whole, is inelastic. The increase in output is more a result of the extension of area under irrigation and double cropping.

Further, the standard deviation and the coefficient of variation are highest in the case of prices of cereals (23·68) and lowest in its acreage (4·2). The coefficient of variation in output is 23·06. This indicates that the acreage under cereals is almost inelastic, the variations in production and prices need a positive step to stabilize production as well as prices.

The trends in the seasonal variation of wholesale prices of cereals indicate that the prices fall between the months of November and May and rise between the months of June and October. The fall is more marked in the months of December (—10·70) and January (—9·25), indicating thereby the

impact of the harvest and the distress sale of product on account of the poor holding capacity of the farmers. Similarly the prices indicate a marked rise in the months of July (+5·49) and August (+9·21). This implies that apart from improving the marketing arrangements, the means of communication and the market intelligence, steps have to be taken to improve and to strengthen the holding capacity of the farmers.

In short, the present study reveals that the supply of foodgrains, particularly of cereals is not likely to adjust itself to the demand for it, on account of the rapidly growing population in Bihar and a higher income elasticity of demand for foodgrains on the one hand and a subsistence agriculture continuously ravaged by floods and droughts on the other. The prices may, therefore, be increasing in future, as they have been indicating a continuous increasing trend between 1956 and 1968. Price incentives on account of higher price for the product may not be a possible solution. Thus more serious efforts may have to be made to increase the supply of agricultural products by making provisions for more agricultural inputs and a policy of production subsidies on seed, manures, fertilizers and water. The production subsidies together with schemes of licensed warehouses, provision of credit and marketing facilities would make an effective contribution to the stabilization of cereal production and consequently its prices. An ever increasing cereal prices may not have any favourable terms of trade for the farmers, as high prices of cereals would raise other prices, i.e., the prices of inputs and other manufactured articles needed for their consumption. Thus, a reduction in the prices of certain manufactured articles generally used by farmers, to maintain parity with the prices of foodgrains and cereals, seems to be a possible alternative. The great need is to eliminate fluctuation in the production of cereals. Thus, stabilizing production of foodgrains and cereals, by subsidizing cost of production of the farmers and their cost of living, may go a long way in increasing the supply of farm products and ensuring stability of prices and incomes.

SOME CRITERIA FOR JUDGING THE RIGHT PRICE LEVEL OF HYV WHEAT, PADDY AND MAIZE FOR MODERNIZATION OF AGRICULTURE IN U.P.

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SUMMARY

The objectives of a price stabilization policy are (i) to prevent depressed harvest prices, (ii) to prevent a larger than normal seasonal price rise, and (iii) to establish stability in harvest price. The level of the support prices should be such that it is high enough not only to provide an economic return to efficient farmers but also enough incentive to help modernization and transformation of agriculture.

Three criteria for calculating the support price of HYV wheat, maize, paddy/rice have been explained. A comprison of the procurement price announced by the Agricultural Prices Commission and the State Government of Uttar Pradesh with the calculated support price on the three criteria shows that the procurement prices for all the three commodities in the period 1965-66 to 1969-70 were lower than the three-year moving average price. The procurement price for wheat was higher than the incentive price in the same period, for maize it was lower except in 1966-67. For paddy the procurement price was lower than the incentive price in the first two years and high in the last two years for which data are presented.

The magnitude of the price differentials between the procurement price and the calculated support price shows that there is least divergence by the criteria of parity price. The data in all the three criteria need refinement. Till such time as the cost of cultivation data are made available, parity price may provide a good criterion for laying the level of the procurement price by the State Government.

CHOICE OF AGRICULTURAL PRICE POLICY FOR SUBSISTENCE AGRICULTURE

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SUMMARY

Indian agriculture has two main sectors, (*i*) subsistence sector, and (*ii*) market sector, which have preponderance of deficit (or subsistence) farmers and surplus (commercial) farmers respectively. The problems of agricultural prices of both these sectors are different since they are attributed to different economic phenomena such as distress sale (or forced sale) and procured deficit and marketable and marketed surpluses, etc. Price incentives are applicable to surplus farmers who are generally growers of cash crops, because their crop pattern is profit-oriented and the cost of production bears direct relationship with agricultural prices. Price support policy therefore is more meaningful to such commercial farmers whose income can be stabilized through stability in prices. The price stability can be maintained either on parity principle or on cost principle. Commercial farmers who produce cash crops such as sugarcane, jute, cotton, groundnut, etc., respond well to price behaviour. There are several studies which reveal that the relative profitability of substitute cash crops over foodgrain crops is mainly responsible for changes in the acreage of crops. For example in Bihar, a change in relative mill price of cane has brought about a change in sugarcane acreage, which affects the capacity utilization of sugar industry. Also changes in acreage under sugarcane were positively associated with prices of *gur* as price of *gur* was more profitable than the prices of its competing crop rice. Subsistence farmers are forced to sell a substantial portion of their agricultural produce just after harvest to meet their urgent needs. Thus there is distress sale of produce even though the subsistence farmers do not possess marketable surplus. There is always a practice among the subsistence farmers to procure the foodgrains after a lapse of some period when they fall short of it for family requirement. The purchase price is generally very much high as compared to the sale price the farmer received at the harvest period. The seasonal fluctuation in prices thus puts the subsistence farmers at double loss. Price changes reflect abnormal reaction by subsistence farmers because at higher prices, they do not sell the foodgrains as much as when their prices are low. The reason is the 'target demand for cash' by the subsistence farmer, which is fulfilled by selling a small quantity at higher prices and a larger quantity at lower prices. The first objective of price policy for the subsistence sector of Indian agriculture should be to reduce to the minimum the seasonal price fluctuations so that low price at distress sale and high purchase price when the farmers purchase foodgrains as procured deficit will not put them at double loss. The second priority should be given to formulate price policy to reduce the quantity of distress sale (or forced sale) to the minimum which would amount to reductions of the quantity of procured deficit and will ultimately induce saving. The overall price policy, however, should have the objective of promoting productivity per acre in the commercial and subsistence sectors of Indian agriculture. The supply price of agricultural commodities should be fixed covering the average cost per unit of the marginal firm farms and the market price should in no case be fixed at a level much below its cost curve, otherwise it will drown the baby in the bathing tub much before.

PRICE POLICY FOR THE SHORT SUPPLY CONSUMPTION GOODS IN A DEVELOPING ECONOMY

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SUMMARY

In the classical economy, prices of all the goods could be left free to reach their equilibrium point through the interaction of demand and supply. But since price is basically related to the overall economic policy a modern government has to regulate free price fluctuation and adopt positive price policy in respect of basic consumption goods. The performance of last one decade shows that while

prices of foodgrains had a steep rise of 20 per cent per annum, production increased only by 2 per cent which indicate that excepting for wheat, deficit in other foodgrains will continue in India for the coming years. One objective of price control is to provide price relief to the poor but from the consumers' price index it is apparent that the real income of the poor sections has reduced almost by 50 per cent during the last decade. Another objective of having greater control of the government on the price and marketing of basic consumption goods has not also been fulfilled as no more than 10 per cent of the total consumption is purchased and sold at controlled prices.

To bring larger quantities of marketable commodities under government control procurement prices may be raised but this will mean higher burden on the consumers through higher sale price. Some price rise is inevitable in developing economy but excessive inflationary pressure with spiralling of costs, prices and money income through mutual interaction disturbed development. In spite of various measures taken by the government to fight inflation, price continued to rise sharply during the whole of 'sixties and the purchasing powers of the consumers sharply declined. Serious discontent among the wage earning classes grew followed by strikes, lock-outs and production deadlocks. With higher expenditure the material content of the planned targets got also reduced. Large scale black marketing (with artificially higher prices) of goods of basic necessity was inevitable which further enhanced consumers' sufferings.

Under these circumstances the entire price structure should be reorganized with a view to better realisation of the primary objectives of price control. In order to correct the imbalance in certain consumers' markets it may be necessary to have physical allocation and restriction on consumptions, and price may be raised or lowered for specific group of consumers. Instead of the present zonal restriction and enforced procurement, a two-price controlled market for each basic commodity appears more effective to serve the primary objectives of price control. This will guarantee minimum supplies to the poor at low prices and those who require more and can afford to pay higher prices may get some more quantities subject to a physical limit. By proper revision of government purchase prices, further price support can also be given to the producers. In the place of one legal and another illegal market there will be two legal markets for each short supply consumption goods. A fixed quantity consistent with minimum requirements per capita will be supplied at the lower controlled price and another quantity will be available at the higher control price. The higher price will include all costs of government subsidy and other expenditure to run the control system. Some of the advantages that may emerge from this system, are that (1) it will allow procurement prices to rise for providing price support to the producers (by raising the higher sale prices) without affecting the lower sale price and hence the poor will not be affected. (2) By raising government purchase price larger quantity can be brought under the control system and this will strengthen government measures of price stabilization, allocation, etc. (3) Due to less demand in open markets, the artificially raised black market prices can be brought down. (4) Huge government expenditure for subsidy and maintenance of the control system can be compensated from the control system itself by eliminating the middleman's profit in black markets. The consumers in general, will still be benefited. (5) Price differentials between controlled and non-controlled markets being less, procurement will be easier, smuggling will be less attractive and hence, cost on vigilance measures can be reduced.
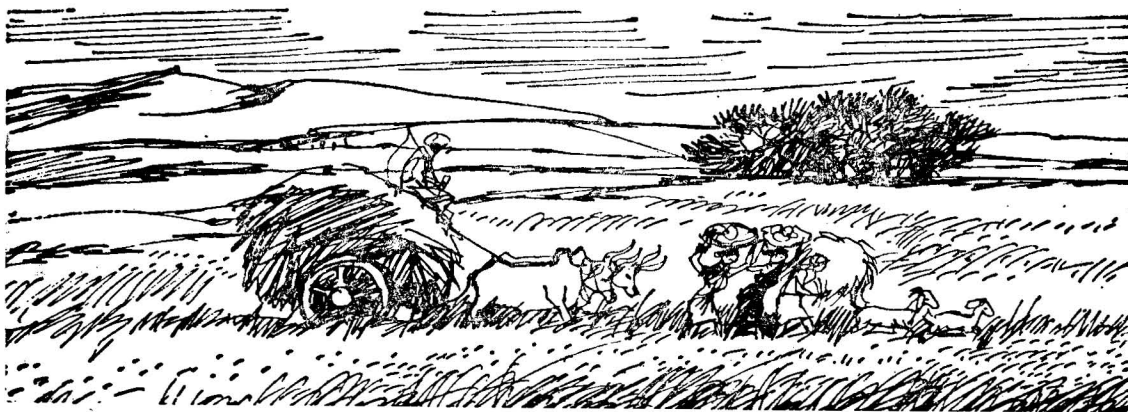

THE ROLE OF PROCUREMENT PRICES FOR FOODGRAINS

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In order to ensure equitable supplies of foodgrains at reasonable prices during the Second World War years, the Government had introduced the system of procurement and procurement prices. The system of public distribution of foodgrains continued even after the end of the War. Until 1963-64, the procurement prices fixed were invariably lower than the prices in the open market. The procurement prices were raised from 1964-65 to be in line with the market prices. In recent years, with the advent of four good foodgrain crop seasons, the rigours of procurement through controls, coercion and monopoly purchases gave way to voluntary sales at the procurement prices for a number of grains. The buffer stock of five million tonnes of foodgrains envisaged by the end of the Fourth Five-Year Plan was more than achieved in the third year itself. With the availability of adequate stocks, there may be every temptation to do away with the system of public distribution and therefore of procurement. But such a step would be fraught with the danger of a sharp rise in prices of foodgrains in

areas/years of scarcity—there would be difficulties of procurement and consequently of availability of stocks for distribution. Even for operating on a buffer stock, a procurement and public distribution system would always be necessary. A better step would be to extend the system of public distribution to the rural areas and distribute foodgrains at subsidized prices to the non-producing rural poor. For this purpose a large stock of foodgrains would be required and procurement effort intensified. The procurement prices may need some rationalisation; but if the impetus of the Green Revolution is to continue, the procurement prices for foodgrains must play their role of incentive prices.