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SUMMARIES

PRODUCER'S SHARE IN THE CONSUMER'S RUPEE - A SAMPLE STUDY OF GROUNDNUT

M.M. Bhalerao, M.J.M. Reddy and V.P. Tyagi*

The objectives of the present enquiry are : (1) to compare average cost, bulk-line cost and their relation with harvest price, both for rainfed as well as irrigated groundnut, (2) to study the trends in arrivals and prices of groundnut and (3) to estimate the groundnut producer's share in the consumer's rupee. The study is based on a two-stage stratified random sample of 234 groundnut growers (162 rainfed and 72 irrigated) selected from nine rainfed groundnut villages and four irrigated groundnut villages in Vayalpad block of Chittoor district (Andhra Pradesh), the basis of selection being six farmers each from small (below 2 hectares), medium (2 to 4 hectares) and large size-groups (above 4 hectares) per village. Primary data, which related to the period from 1st July 1983 to 30th June 1984 for the sample farmers, were collected by survey method and secondary data for arrival and prices of groundnut were collected for the period from 1976 to 1983, for which data were available from the four market centres in the block. The trend was estimated by using 12 months' moving average and the index of seasonal arrival and price variation.

The average size of holding was 4.34 hectares for the rainfed groundnut farmers (RFGF) and 4.42 hectares for the irrigated groundnut farmers (IGF). Their intensity of cropping was 107.91 and 115.17 respectively. RFGF had about two-thirds of gross sown area under groundnut, while IGF had 56 per cent under rainfed groundnut and 9.28 per cent under irrigated groundnut. The proportion of gross irrigated area to gross sown area was 28.78 per cent for RFGF and 40.54 per cent for IGF, wells accounting for more than 80 per cent of the irrigated area in both the cases. Per farm and per hectare borrowings for IGF were almost double those for RFGF. Private agencies (moneylender-cum-traders) had a predominant share in the total borrowings followed by co-operatives and commercial banks.

The average yield on IGF was almost two and a half times that for RFGF. The same was the case for bulkline cost and average cost. The bulk-line cost covered a greater proportion of farmers, area and output of groundnut on both RFGF and IGF. The seasonal index of groundnut prices was the lowest in December except in Vayalpad and Kalikiri, where it was the lowest in November. Thereafter, it began to rise till it reached its maximum in June. Generally the price movement is characterized as less than average from October to January with an index of less than 100.

The producer's share in the consumer's rupee was quite low and the price spread accounted for quite a big chunk of the consumer's rupee. On further investigation, it was observed that there was no co-operative marketing or processing society in the region of study, while the groundnut trade was mainly in the hands of well-organized private functionaries (closely-linked with each other) such as the oil miller, groundnut wholesaler, village trader and oil wholesaler. Absence of groundnut grower's co-operative or absence of any vertical integration in groundnut trade, thus, has contributed to higher price spread, *i.e.*, higher margins of functionaries and higher marketing costs incurred. The study of pattern of borrwings of sample farmers has also revealed the dominance of private agencies in financing groundnut producers. Thus, absence of reasonably priced co-operative finance, processing, storage and marketing facilities and the consequent imperfections in groundnut market have depressed the producer's share. If such a co-operative infrastructure is built up, there is considerable scope for increasing the efficiency of groundnut marketing and the share of groundnut producer.

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MARKETING COSTS AND MARGINS UNDER DIFFERENT MARKETING CHANNELS OF POTATO TRADE IN CUTTACK DISTRICT OF ORISSA

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Cuttack district ranks first in area under and production of potato among all the districts of Orissa. Nearly two-fifth (44 per cent) of the total potato acreage of the State is in the district which contributes 48 per cent of the State potato production. In this paper, an attempt has been made (1) to analyse the producer's share, marketing costs and margins with different marketing channels and (2) to estimate the net producer's share over the cost of production of potato in different marketing channels. The data were collected from three marketing channels with a time horizon of three years (1979 to 1981). Altogether 36 producers, 36 consumers, 12 village traders, 12 wholesalers, 12 traders and 24 retailers were contacted for the study over the period. In the marketing channel having three middlemen, the producer got Rs. 84.42 (55.06 per cent), marketing expenses accounted for Rs. 24.75 (16.14 per cent) and the margins of intermediaries accounted for Rs. 44.16 (28.80 per cent) per quintal of potato. The consumer paid on an average Rs. 153.33 per quintal.

In the second marketing channel, the producer's net share was Rs. 89.92 (58.64 per cent) and total marketing costs and margins together amounted to Rs. 63.41 (41.36 per cent) per quintal of potato. By direct selling the producers received Rs. 133.93 (93.44 per cent) and marketing expenses amounted to Rs. 9.40 (6.56 per cent) per quintal of potato. The return over cost of production is highest in direct selling. It tends to decline with an increase in the number of intermediaries in the marketing channel. On an average, the producers failed to recover their cost of production in the first and second marketing channel. But in the third marketing channel the growers benefited by Rs. 37.98 over the cost of production per quintal of potato.

PRICE STRUCTURE OF KASHMIR APPLES

M.K. Dhar and B.A. Baig*

During the last two decades the apple production in Kashmir valley has recorded a tremendous increase with an annual estimated income of more than Rs. 35 crores at current prices. Therefore, the apple producers have to take crucial decision as to when and where to sell the produce to get remunerative prices. Specifically, the paper studies seasonal price variation, spatial price differential, economics of cold storage and dissemination of market price information of Kashmir apples. Secondary data on average prices per standard case of apples in Delhi, Bombay and Calcutta markets were obtained from Government and private marketing agencies. Twelve months' moving average was used to work out the seasonality pattern of apple prices in the selected markets. Partial budgets were formulated to study the economics of cold storing apple. Multi-stage random sampling design was used to study the dissemination of marketing information.

The study revealed that the apple prices are characterized by wide seasonal fluctuations. The lowest index of 75.24, 77.96 and 79.14 was recorded for the month of November and

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the highest index of 139.02, 139.62 and 142.61 for the month of July for Delhi, Bombay and Calcutta markets respectively. The spatial price differential analysis revealed that for the Delicious and American varieties of apple, there existed wide variation in the prices during different months of the season as well as spatially separated markets. To effect orderly marketing and obtain remunerative prices the apple producers should adjust their supplies to the situation of demand and seasonal price index during different months of the year. To maintain perfect balance between demand and supply, cold storing of apple is essential. The study revealed that a net gain of Rs. 14.65 per standard box of Delicious variety of apples could be obtained by cold storing for a period of four months from October to January. The field investigation revealed that the producers made use of different sources of market information; 46.47 per cent of the total apple producers under study falling under small and medium categories were deprived of market information and the remaining received market news from one source or the other. This aspect of marketing needs to be strengthened by providing market information through television and other media of farm information.

PRICE STRUCTURE FOR PULSE CROPS

S. S. Acharya*

The objective of the study was to examine the price behaviour at farmers' level over time and across farm groups, farm-retail price spread and its components and some structural characteristics of the market affecting the price behaviour. The study pertains to Rajasthan State and the gram crop. Secondary data on farm harvest prices, wholesale prices and retail prices and primary data collected from a sample of 217 gram producing farmers and 26 village traders, located in 40 villages and 20 market traders, ten processors and ten mandies of ten major pulse producing districts were used for the study.

The study revealed that the trend of farm harvest prices of gram has shown an increase over time. The difference in prices received by the farmers of different groups was significant. Large farmers received higher price than small farmers. Those who sold in the villages did not receive a lower price than the price received by those selling in the regulated markets. Nearness to the market and availability of link road also revealed positive effect on farmers' price. The farmer's share in the consumer's rupee was 67 per cent but it varied from year to year, from district to district and one farmers' group to the other. Total mark up over farmers' price was 49.32 per cent, most of which (27.21 per cent) was at processing stage. Processors' net margin was 14.02 per cent. Though 28 marketing channels were observed for gram, 97 per cent of the produce passed through wholesalers and 46 per cent through processors. Concentrated oligopsonistic situation was observed in gram trade. Nearly six per cent of the firms accounted for 65 per cent of total gram purchases in the market. Unless this situation is improved, the consumer will continue to pay a higher price for *dal*, yet the farmers' share will continue to be low and they will not be induced to increase production.

The policy implication of the study is that pulse marketing system has to be made more competititive so that price signals arising out of pulse shortages (relative to demand) are transmitted to the farmers. This can be achieved by encouraging the establishment of mini and small processing units in a dispersed manner in pulse producing areas and setting up of State Level Pulse Marketing Federation to procure pulse grains from farmers or through co-operatives, process them and provide *dal* to consumers at reasonable prices. These measures will increase the farmers' share in the consumer rupee, reduce price spread and make available cheap pulses to the consumers.

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AN ECONOMIC STUDY OF RAPESEED AND MUSTARD MARKETING AND PROCESSING IN WESTERN REGION OF UTTAR PRADESH

M.P. Singh and S.A. Ali*

The present study was undertaken *(i)* to identify the different channels of marketing of rapeseed and mustard oil, *(ii)* to work out the cost of processing, *(iii)* to work out the price spread. Agra district was purposively selected, because it ranks first both in area and production in Uttar Pradesh. Data were collected from 102 farmers, 14 village traders, seven wholesale-cum-commission agents, 15 expellers and 24 retailers for the market season of 1983-84. The farmer himself was considered as the consumer of oil. Tabular analysis was done to achieve the objective and Fisher's 't' test was used in order to test the significance of difference between mean marketing margin in the different channels. Four channels were observed. In the first channel, *i.e.*, expeller-retailer-consumer, the producer's share in the consumer rupee was 7 per cent. In the second channel, *i.e.*, producer-village trader-wholesaler-cum-commission agent – expeller-consumer, the producer's share was 81.7 per cent. In the third channel, *i.e.*, producer-wholesaler-commission agent-expeller-consumer, the producer's share was 82.5 per cent. In the fourth channel, *i.e.*, producer-expeller-consumer, the producer's share further increased to 83.25 per cent. The margins of expellers were found to be maximum in each channel. The 't' test showed that the fourth channel was found to be the most efficient. The cost of processing was found to be Rs. 20.98 per quintal and Rs. 9.58 per hour. It is suggested that group marketing, co-operative marketing, provision of timely credit facilities, establishment of expellers on co-operative basis and strengthening marketing extension services will increase the marketing efficiency and safeguard the farmers from exploitation of the expellers.

AGRARIAN PRICES IN INDIA (1948-77): A STUDY IN TRENDS AND STRUCTURE

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Fluctuations in agrarian prices have far-reaching consequences on the business prospects and general level of employment and income in the economy. The present paper is an attempt to find out the trends and structure of agrarian prices and to present a brief review of the agrarian price policy.

The compound growth rates along with their standard errors of estimates, have been calculated for the wholesale prices of all commodities, food articles, foodgrains, cereals, pulses, vegetables, spices and condiments, and oilseeds. Further, with a view to investigate into the dependence of general prices on agrarian prices and of agrarian prices on the prices of components, multiple regression coefficients have been calculated along with their standard errors of estimates. During the period 1948-57, the maximum variation was observed in the prices of spices and condiments (17.103) followed by the price of pulses (16.132). The coefficents of variations in foodgrains, food articles, and general prices were found to be 11.789, 7.333 and 6.099 respectively. During the same period, the highest growth rate was observed in the prices of pulses (4.783). The general price level increased at the rate of 0.090 per cent per annum.

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During the period 1958-67, the maximum variation was witnessed in the prices of pulses (42.77). The coefficients of variation in foodgrains, food articles, and general prices were found to be 29.942,26.896, and 20.469 respectively. The growth rate was found to be maximum in the prices of pulses (18.733) followed by oilseeds prices (11.798). The growth rate of foodgrains prices and general prices was 8.691 per cent and 6.684 per cent respectively per annum.

During the period of 1968-77, the maximum variation was observed in the prices of spices and condiments (38.353) followed by oilseeds prices (31.268). The coefficients of variation in foodgrains and general prices were found to be 25.305 and 27.095 respectively. During the same period the highest growth rates was observed in the case of spices and condiments prices (12.265) followed by oilseeds prices (10.112).

Taking the whole period together (1948-77), the maximum variation was observed in the spices and condiments prices (704.954) followed by oilseeds prices (647.84). The coefficients of variation in foodgrains prices and general prices were found to be 624.665 and 610.830 respectively. Thus, agrarian prices have remained more unstable in comparison to general prices.

The regression coefficients of general prices on agrarian prices have been found to be 0.60, 0.81, 1.15 and 1.04 during 1948-57, 1958-67, 1968-77 and 1948-77 respectively and all these coefficients have been found to be highly significant. Similarly, the regression coefficients of agrarian prices on foodgrains, vegetables, condiments and spices, and oilseeds prices have been found to be 0.95, 0.92, 0.93, and 0.91 respectively during the period 1948-77.

Thus, the agrarian prices have witnessed greater variation than the general prices and general prices depend on agrarian prices to a great extent. The appointment of the Foodgrains Policy Committee in 1943, Foodgrains Enquiry Committee in 1957, and Agricultural Price Commission in 1965 are some of the important measures adopted for stabilising the agrarian prices in India. An integrated policy incorporating price policy, farm credit policy, irrigation policy and overall agricultural development policy is required to bring about the stability in the agricultural production and prices.

DYNAMICS OF PRICE SPREAD FOR WHEAT AND GRAM IN MADHYA PRADESH

P.K. Mishra, S.B. Nahatkar and B.L. Mishra*

The paper attempts to analyse the behaviour of marketing cost, marketing margins, and the producer's share for wheat and gram in Madhya Pradesh at two different periods of time (1978-79 and 1984-85). Krishi Upaj Mandi, Jabalpur and 45 farmers from adjoining villages were selected randomly for detailed investigation. 'Concurrent' and 'lagged margins' methods were used to examine the behaviour of different components of price spread in relation to time lag involved in the purchase and sale of the commodity under reference. It was hypothesized that cost-price escalations adversely influence the producer's share over time.

The results lead to the acceptance of the hypothesis that the producer's share declined from 84.50 per cent to 83.77 per cent in case of wheat and from 86.46 per cent to 84.84 per cent in case of gram during the two periods considered for analysis. A proportionate decline in the producer's share along with a decline in the marketing cost was obviously claimed by the traders or the middlemen in terms of their margins by way of market transactions. The producers suffered more in the case of gram as compared to wheat because of the higher

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gram price escalations during the succesessive intervals of its transactions from one hand to another. These results clearly indicate that the farmers need to be compensated in proportion to the decline in their share. Ad valorem tax on the traders may be imposed and the tax receipts should be distributed to the farmers as bonus which may be linked with the quality of the produce offered for sale.

PRODUCER'S SHARE IN CONSUMER'S RUPEE – A CASE STUDY OF FRUIT MARKETING IN MARATHWADA

B.W. Ashturkar and C.D. Deole†

The case study of producer's share in the consumer's rupee in fruit marketing in Marathwada (Maharashtra State) points out that banana and citrus are the important fruit crops grown in the region. Per hectare expenditure incurred on banana crop was Rs. 11,843, whereas the income earned was Rs. 25,966, giving an average per hectare profit of Rs. 14,123. Per rupee return on investment was estimated to be Rs. 2.19. Per hectare expenditure on citrus crops varied between Rs. 7,597 and Rs. 10,119 whereas the income varied between Rs. 18,917 and Rs. 26,201. Per hectare profit from citrus crops was in the range of Rs. 11,320 to Rs. 16,082. Input-output ratio ranged between 1:2.46 and 1:2.58. Input-output ratio in mandarin orange was comparatively higher than sweet orange and sour lime. The study of price spread in banana marketing showed that the producer's share in consumer's rupee under different marketing channels varied between 45 per cent and 70 per cent. The number of intermediaries increases the consumer's price. Among the intermediaries, the pre-harvest contractor earned more profit, thereby reducing the producer's share in the consumer's price. In the case of citrus fruits the producer's share in the consumer's price was about 28 to 30 per cent whereas the middlemen's share was about 24 per cent. The costs of marketing varied between 45 and 48 per cent of the consumer's price. The results of the study point out that the marketing costs and middlemen's share increase the consumer's price and decrease the producer's profit.

The demand for agricultural commodities is comparatively inelastic. The seasonal nature of production does not allow to keep pace between demand and supply. Fruits cannot be stored, preserved or withheld from marketing for a longer time because of their perishable nature. As a common rule, with an increase in supply the price declines, as supply cannot be adjusted with the demand. To overcome the above difficulties, agro-industries based on horticultural crops need to be developed. To keep pace between demand and supply cold storage facilities are required to be provided within the reach of cultivators at reasonable charges. This will help to store the fruits comparatively for a longer time. Lastly alongwith infrastructural development (such as roads, banks, etc.),the role of co-operative marketing cannot be overlooked. Marketing on co-operative basis will not only be beneficial to the producers but also helpful to the consumers in getting quality fruits at a reasonable price.

CHANGES IN THE COST STRUCTURE IN AGRICULTURE: A CASE STUDY OF CASH CROP OF CHRYSANTHEMUM IN MAHARASHTRA

S.B. Dangat, D.K. Mahandule and M.P. Dhongade*

An attempt is made to study the changes in the prices of inputs and output of chrysanthemum, a cash crop and the impact of the change in the price on farmer's income at two points

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of time. The study on the economics of production of chrysanthemum was carried out in Parner tahsil of Ahmednagar district of Maharashtra at two points of time, *viz.*, during the years 1969-70 and 1981-82. The study covered 110 growers from four villages in 1969-70 and 90 growers from eight villages in 1981-82. The data were collected by survey method during both the periods.

It is observed that the per unit prices of all the inputs used for the production of chrysanthemum and the prices of output increased during the year 1981-82 over those in 1969-70. A spectacular increase was noticed in the wage rates of female labour due to the implementation of the legislation relating to the payment of equal wages to male and female labour on the EGC works. The per day wage rate of female labour during the later period increased by 566.77 per cent over that in the earlier period. The wage rates of male labour increased by 275 per cent and that of bullock labour nearly doubled during the same period. The prices of the yield boosting inputs like manures and fertilizers also doubled during the period. There was little increase in the prices of the seed material (19 per cent). The study of changes in the use of inputs revealed that the per hectare use of human and bullock labour decreased during the later period, because of adoption of labour saving devices. It is interesting to note that in spite of an increase in the prices of manures and fertilizers, their use has increased. Similarly, the use of insecticides and pesticides increased during the period under study.

The per hectare cost of production in 1981-82 (Rs. 34,891) was more than two fold over that in 1969-70 (Rs. 13,245). The main item in the total cost was marketing cost during both the periods. Its share was 38 and 58 per cent of the total costs during the two periods respectively. Transportation charges had a lion's share in the marketing cost. Human labour charges accounted for 12 and 10 per cent of the total cost during the respective years. There was little decline in the per hectare yield of the crop during the later period. It was 9,578 and 8,570 kg. per hectare in 1969-70 and 1981-82 respectively. The total value of produce during these years worked out to Rs. 21,497 and Rs. 37,966 per hectare respectively. Though the per hectare gross returns increased during the later period, the net income declined. The per hectare net income during the year 1981-82 was only 37 per cent of that in the year 1969-70. The per kg. cost of production worked out to Rs. 1.38 and Rs. 4.07 during the corresponding years under study. As against this, the per kg. price received for the produce was Rs. 2.24 and Rs. 4.43 respectively. Thus, the decline in the per hectare net income from the cultivation of chrysanthemum may be attributed not only to increase in the prices of inputs as compared to that of output but also to the reduced yield during the decade. It emphasizes the need for increasing productivity of the crop and for having a parity between the prices of input and the output.

AN ANALYSIS OF NET PRICES RECEIVED BY THE ALPHANSO MANGO GROWERS OF RATNAGIRI DISTRICT (M.S.)

S.N. Tilekar†

The main purpose of the present study was to investigate into the nature and magnitude of the problems of farmers in marketing the alphanso mangoes. The study also examined whether there were differences in the nature and magnitude of problems faced by different groups of farmers. Ratnagiri district in Maharashtra was purposively selected for this study.

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A sample of 240 households were selected and the reference period for the survey was 1977-78. The data collected from the farmers were analysed using tablular and regression techniques. A price analysis approach was used in this study, since the effects of the various marketing problems are reflected in the net prices received by the farmers. The findings of the study revealed that the size of the product, agency to whom sold and the time of sale are the most important factors influencing the net prices received by all classes of farmers. The model used in this study gave significant and high values of R^2. The degree of market imperfection as judged by the value of R^2, varied from one group to another. The smaller the size of holding, the larger was the degree of imperfection faced in the market. The net prices received for alphanso mango had direct relation to the size of holding. Development of marketing infrastructural facilities in the district is suggested.

A COMPARATIVE ANALYSIS OF PRICE SPREAD FOR EGGS IN MADRAS CITY 1981 AND 1985

R. Prabaharan and S.N. Sivaselvam*

This paper seeks to *(i)* identify the marketing channels for eggs and *(ii)* estimate the price spread in the marketing of eggs during the period 1981 and 1985. The data were collected from both primary and secondary sources. For the purpose of comparison between 1981 and 1985, estimates were taken from the report published during 1981. For the present study, a sample of 15 wholesalers, 20 secondary wholesalers and 30 retailers were selected. There are five marketing channels for eggs in Madras City. The channels are : (1) producer-wholesaler-secondary wholesaler-retailer-consumer, (2) producer-wholesaler-consumer, (3) producer-wholesaler-secondary wholesaler-consumer, (4) producer-Tamil Nadu Poultry Development Corporation-retailer-consumer and (5) producer-consumer. Channel 1 was observed to be the main channel covering about 85 per cent of the marketed surplus. Among the channels, channel 5 has the highest operational economy, because there are no marketing charges involved for various intermediaries. This channel could not become effective due to lack of organization among the producers. Channel 4 ranks second based on the quantity of eggs handled. The price spread was worked out for channels 1 and 4 for the years 1981 and 1985. The net share of the producer in the consumer's rupee was nearly 75 per cent in 1981 and 76 per cent in 1985 in channel 1. The margin of profit accounted for 5.0, 2.5 and 5.0 per cent of the consumer's rupee for the wholesaler, secondary wholesaler and retailer respectively during 1981 and 2.0, 4.0 and 5.4 per cent respectively during 1985. Next in order is the transportation cost which accounted for 5 per cent at the producer level during 1981 and 1985. In channel 4, the producer is able to get a lion's share in the consumer's rupee to the extent of about 89 and 91.5 per cent during 1981 and 1985 respectively. The facts indicate the need for introducing and promoting an organized market in the egg trade. An oligopsonistic market existed in the wholesale egg trade.

IMPACT OF WHEAT REVOLUTION ON FARMERS' INCOME

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Due to paucity of comparable time-series data on costs and returns, it is not possible to quantify precisely the impact of wheat revolution on farmers' income. The available evi-

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dence suggests that the wheat economy has become an increasingly high cost economy over the years. There was a declining trend in net returns per unit area under wheat till 1976-77 and an improvement is apparent thereafter. These trends in net returns per unit area under wheat should not be a cause for alarm because social gains from increasing productivity have been tremendous. The present period is one of transition from traditional to modern agriculture. Wheat revolution became possible with a breakthrough in production technology and has led to increasing crop intensity in the wheat belt, with its ample water resources and fertile soils. Yield and profitability advantages arising from it have led to impressive allocations of area and resources to the crop. The future strategy in the case of wheat has to be multidimensional especially emphasizing technological research and variety improvement. Price policy has a supplemental, although a vital, role to play in augmenting wheat production to the targeted levels. It has to ensure, especially in the years of bumper crop production that the wheat farmer is at least able to recover his costs. The small wheat grower who has little marketable surplus, and is therefore not much benefited from procurement operations needs particular attention in the matter of extension and input support for improving his cropping intensity and combining crop husbandry with subsidiary enterprises, where possible, to make his overall farming operations economically viable.

SHARE OF THE GROUNDNUT GROWERS IN THE CONSUMER'S RUPEE IN SAURASHTRA REGION OF GUJARAT STATE

V.T. Raju, B.D. Bhatt and B.U. Bhatt*

Indian public policy has been directed to ensure a higher share to the farmers in the consumer's rupee through a number of measures. It was felt that the regulated markets would help the farmers in getting more reasonable prices for their products. But there is a growing concern that while the consumer is being squeezed through rising prices of agricultural commodities, the producer has not been benefiting adequately. It is necessary to verify this and hence a study was conducted to find out the share of the farmers in the consumer's rupee in the case of groundnut which is the most important commodity in the Saurashtra region of Gujarat State. The main objectives of this study are (1) to estimate the marketing costs, margins and price spread for groundnut in the regulated markets of Saurashtra and (2) to study the Gujarat Co-operative Oilseeds Growers' Federation (GROFED) in Saurashtra.

For this study eight regulated markets of Saurashtra known for groundnut and GROFED of Saurashtra region were selected. The data were collected from eight market committees, 125 farmers, 64 traders, 12 oil millers and GROFED for the marketing year 1981-82. The concurrent method was used to estimate marketing costs, margins and price spreads.

The results of this study indicated that in the selected regulated markets the share of the farmers in the consumer's rupee varied from 72 to 81 per cent. Among different channels, millers obtained the higher margins (4 to 8 per cent) followed by wholesale trader (2 to 4 per cent) and retailers (1 to 4 per cent). In the case of GROFED, the share of the farmers in the consumer's rupee was over 86 per cent which was higher than that obtained from any regulated market. On the basis of the results of this study it is concluded that the groundnut farmers benefited more by selling their produce to GROFED than in the regulated markets. Hence it is suggested that the organizations like GROFED should be formed and encouraged for the production and marketing of agricultural commodities which benefit both the producers and consumers.

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CASHEW PROCESSING AND MARKETING

Md. Hasan and P. Raghuram**

Cashew is an important tree crop with tremendous export potential which has netted Rs. 159.93 crores during 1984 in foreign exchange. Cashew processing is an important agro-based industry providing sizable labour employment. The cashew grower deserves a remunerative price for his produce while the processor needs a reasonable price for his processed kernels. With this back drop, an enquiry was conducted in Vetapalem, one of the two major cashew processing centres in Prakasam district of Andhra Pradesh, to study the different stages in cashew processing including the costs involved, the recovery of kernels from nuts and finally market structure and market margins at the local and national markets (export market). The data were collected while studying the ten processing units, located in the selected centre. The conversion of nuts into kernels involve drying, roasting and shelling of nuts, drying, peeling, grading and conditioning of kernels and finally the packing of conditioned kernels. Eighty kg. of raw nuts when processed approximately result in 22 kg. of kernels (28 per cent recovery) and the processor incurred Rs. 87.06 as processing cost in the bargain. Of the kernels so obtained the grade W 320, an important export quality, formed 60 per cent. The producer's share in the consumer's rupee worked out to 68.5 per cent while the margin to the processor was 11.5 per cent in the local trade. In the national market the share of the producer in the consumer's price was 55.48, 55.70, 55.50 and 55.20 per cent and that of the processors was 16.24, 16.29, 16.23 and 16.15 per cent in the importing centres of Delhi, Calcutta, Madras and Bombay respectively. There is no denying the fact that the processor's margin is sizable in the consumer's rupee but in a product like cashew where the ultimate product, cashew kernels, are obtained after strenuous processing of raw nuts and the processor for all his establishment and labour deserves that margin for his survival in the business. The share of the producer can be bettered if the producers themselves form processing organizations to route the cashew kernels into the market.

STRUCTURE AND BEHAVIOUR OF CEREAL PRICES IN TAMIL NADU

T. Prabha*

This paper analyses the behaviour of prices and the factors affecting price structure of rice, *cholam, cumbu* and *ragi* in Tamil Nadu during 1955 to 1977. In particular, seasonal variations, the trends in prices and the supply and demand factors that influence prices are analysed. For rice the impact of government intervention policy in the seasonal variations of prices is also studied. The administered price does not allow the seasonal fall to go below the procurrment price and the lean season rise is kept within bounds by distribution through fair price shops and therefore government intervention has altered the seasonality of prices. It is observed that the relative movement of prices of *cholam, cumbu* and *ragi* are positively correlated with each other. It may be possible that the relative movement of prices of rice may not be highly positively correlated with the movement in the prices of other cereals. In the period under study, a mild stability in prices was observed from 1955-62. An upward trend was noticed from 1963-69 though it was not large. The rate of increase in prices was large from 1969-75.

On an average, the seasonal swings in prices of rice are low rather than high. The seasonal price rise from trough to peak is less than 15 per cent in 10 out of 23 years, while it is more

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than 20 per cent in another ten years. In the intervention period especially during 1964-69 (with State monopoly of inter-district movement and distribution) the variation in price did not exceed 4.38 per cent. A study of the factors influencing the changes in the price of rice indicated that for the period under study they were relatively more elastic with respect to supply than demand factors.

PRICE INTEGRATION AND MARKETING EFFICIENCY OF FOODGRAINS MARKET - A CASE STUDY

M. L. Singh†

The objective of this paper is to examine *(i)* whether the prices of foodgrains at various market levels are integrated and *(ii)* whether the price difference between two market levels is greater than the marketing costs. The study was conducted in Palamau district (Bihar) and relates to rice and wheat. The data were collected from 122 farmers, 20 village level traders, nine wholesalers, 40 retailers and 156 consumers, selected on stratified random sampling basis. The prices relate to common and comparable varieties of rice and wheat. The coefficients of correlation between monthly prices at various market levels. *viz.*, village, mandi and retail levels exceeded 0.90 which show a strong measure of inter-market integration. The difference in prices between two market levels was only slightly higher than the marketing costs in most of the months. Much of the surplus value appropriated by the traders reflects the disguised interest collection on loans advanced to farmers and consumers. The price difference between two market levels was thus found not to exceed the marketing costs. The share of the farmers in the consumer's price could increase by 1.78 per cent in the case of rice and 2 per cent in the case of wheat, if Market Regulation Act was strictly enforced.

PRICE SPREAD OF WHEAT IN DISTRICT FAIZABAD OF EASTERN UTTAR PRADESH (A CASE STUDY)

J.P. Mishra and B.B. Singh*

Agricultural marketing is an integrated part of production planning. It is an established fact that efforts towards increasing agricultural production cannot be sustained for long unless the farmers are ensured remunerative prices and a fair deal in the disposal of their produce. No doubt, efforts have been made by the government to strengthen the agricultural marketing organization and to improve the agricultural marketing system but still the producers are not able to get remunerative prices for their produce in the markets. This problem is also serious in eastern Uttar Pradesh particularly in the marketing of wheat. An attempt is made in this paper (1) to work out the cost and margins in the marketing of wheat and (2) to work out the producer's share in the consumer's rupee. Two markets, namely, Faizabad and Golabazar in Faizabad district of Uttar Pradesh were selected purposively and 12 village traders, 16 commission agents/wholesalers, 13 retailers and 25 producer-sellers were interviewed personally for the purpose. the prevailing price of the same date at different stages of marketing was considered to work out the middlemen's margin and the 'concurrent margin method is used to work out the marketing margin. Two main channels, *viz.*, *(i)* producer-village trader-wholesaler/commission agents-retailer-consumer and *(ii)* producer-

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commission agents/wholesaler-retailer-consumer were found in these markets. The data of both the markets were pooled and analysed.

It was observed that the cost of marketing was higher than middlemen's profit in both the marketing channels. It was about 53 per cent of the total price spread in channel I and about 66 per cent in channel II. The middlemen's margin was 46.93 per cent in channel I and 34.30 per cent in channel II. The marketing cost incurred by different functionaries was also studied and it was found that the wholesalers/commission agents spent more than others while the retailers were able to earn more profit due to less marketing cost in both the situations. Transportation and taxes were the main constituents of marketing cost. Transportation alone contributed 36.11 per cent to the total cost of marketing under channel I against 28.88 per cent in channel II. The producer's share in the consumer rupee was 76.34 per cent in channel II as against only 69.43 per cent in channel I. Due to the presence of a large number of middlemen in the present marketing system, the producers got a lower share in the consumer's rupee. The co-operative marketing societies and regulated markets can increase the producer's share if the services of these agencies are prompt and efficient. Opening of market yards in the rural area may reduce the costs and can increase the share of the producers.

FACTORS RESPONSIBLE FOR CHANGES IN OUTPUT PRICES OF WHEAT AND MAIZE IN HIMACHAL PRADESH

J.C. Kharwal and A.M. Misra†

Changes in agricultural prices have bearing on the income of farmers, cost of production, cost of living and distribution of national income. An attempt is made in this paper to examine the factors responsible for changes in output prices of wheat and maize in Himachal Pradesh. The study is based on data collected from a random sample of ten cultivators selected from a cluster of three villages in Una tehsil of Himachal Pradesh for each of the years from 1974-75 to 1984-85, following multi-stage sampling basis. Total output, area under and average productivity of the two crops are calculated for each year separately. The harvest and average annual prices are recorded for each year for each crop. Linear regression model was fitted to the data. The harvest prices of wheat and maize were taken as endogenous variables and seed prices, wages for labour and productivity as exogenous variables. The harvest prices for wheat and maize were found to be changing in the same direction in which their seed price and wages for labour changed. The productivity of maize had positive correlation with harvest price but this was not so in the case of wheat. The correlation coefficients between various input-output price ratios studied were insignificant.

DO SEASONAL DIFFERENCES IN PRICES EXCEED STORAGE COST?

M.I. Memon and C.S. Mishra*

Seasonal fluctuations in prices is a characteristic feature of agricultural commodities. But do prices rise over and above the storage cost between the immediate post-harvest period and the off-season? An attempt has been made in the present paper to examine the vari-

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ations in the prices of paddy (coarse and fine variety) in a rice producing region of Madhya Pradesh. The study pertains to three regulated agricultural produce markets of Raipur district in Madhya Pradesh covering the period October 1971 to September 1981. It is revealed that in the case of coarse variety of paddy in the majority of years it did not pay the producer-seller to postpone his sales in the month of September. However, when he sold it in July in five or more years the prices were greater than the cost of storage and therefore he earned a marginal profit ranging between 23 paise to Rs. 5.35 per quintal. In the case of fine variety, however, prices infrequently exceeded the storage cost in the month of July and September.

COSTS AND MARGINS IN THE MARKETING OF BIDI TOBACCO IN NIPANI TRACT

R.R. Doshi†

Nipani tract is a small pocket comprising Nipani town and 60 villages in Belgaum district of Karnataka State and has a countrywide reputation for the production, processing and marketing of the best quality bidi tobacco. Over the last two decades the market structure has changed from three-tier (producers, assembling and export) to two-tier (producers and assembling-cum-export). 'Anagad' tobacco is purchased from the growers, processed into 'jardi' blend and sold to the bidi manufacturers all over the country. The market is entirely in the private hands. The market is studied with reference to the years 1963-64 and 1982-83. In the producer's market, the traders purchase the raw produce ('anagad') from the growers by negotiating personally. Per kilogram cost of marketing of 'anagad' moved up from Re. 0.67 in 1963-64 to Re. 0.84 in 1982-83. There was scope for reducing this cost by Re. 0.59 and Re. 0.66 in the respective years by eliminating the unjustifiable deductions. The grower's share in the average price of 'anagad' improved from 73.20 per cent in 1963-64 to 89.50 per cent in 1982-83.

In the assembling-cum-export market, between 1963-64 and 1982-83 per kilogram cost of processing increased from Re. 0.14 Re. 0.77, the cost of marketing from Re. 0.28 to Re. 1.06 and net earnings of the trader from Re. 1.08 to Rs. 2.15. The rise was due mainly to inflationary situation. The trader's earnings as a percentage of value of 'jardi' mix, however, slumped from 31.74 per cent to 19.10 per cent.

Regarding the price spread between the price of 'anagad' and the sale price of 'jardi', of the price of 'jardi' the share of assembling-cum-export market was 59 per cent and that of the grower 45.75 per cent in 1963-64. In 1982-83, the position improved in favour of the grower since he received 57.28 per cent of the price of 'jardi', leaving 44.96 per cent for the assembling-cum-export market.

In sum, in spite of the existence of a regulated market, the bidi tobacco market in Nipani tract continues to function in an unorganized manner with the reins in the hands of the buyers of 'anagad' and 'jardi'. The change in the market structure to some extent is caused by the grower's resistance and ejection of the small trader. Consequently, the grower's share in the price of 'anagad' as also of 'jardi' has improved significantly. It can improve further if the Market Committee sincerely regulates the trade. For the traders, their earnings have declined over the period.

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ANALYSIS OF MARKET MARGINS IN RELATION TO COSTS AT VARIOUS STAGES IN MARKET CHANNEL – A CASE STUDY IN AKOLA MARKET

B.D. Bhole and P.N. Bidwai*

The present study is an effort to analyse the price of agricultural commodities at various stages in market channel and degree of competition between intermediaries at different levels in Akola market in Maharashtra. The specific objectives of the study were *(i)* to study the prices of selected commodities at different stages in the market channel, *(ii)* to work out the market margins in relation to marketing costs and *(iii)* to study the relationship between price structure and market competition. In all, five major crops of the region, namely, jowar and wheat under cereals, *tur* and *mung* under pulse crops and cotton as main cash crop were selected for the study. Necessary data were collected from 100 cultivators (20 for each crop) and ten each of the intermediaries, *i.e.*, wholesaler, retailer and commission agent and 5 *dal* mill owner-processors by survey method. The data pertain to 1982-83 season.

The results of the study indicated that 'producer-wholesaler-retailer-consumer' was the most common channel of distribution for cereals. Price differences between different stages in market channel in comparison to the costs incurred at these stages serve as a best guide for judging the competitiveness in the market. The broad conclusions that emerge from the study are: (1) Implementation of Monopoly Procurement Scheme for cotton in Maharashtra resulted in reduction in the marketing cost to be borne by the cultivator by way of eliminating the intermediaries from marketing channel. (2) Absolute market margins were highest in pulse crop and that too at the processor's stage, indicating thereby monopolistic market conditions at the processor's level. (3) For cereal crops market conditions were found to be more competitive at the wholesaler's stage than at retailer's stage. And (4) comparison between net returns and costs indicated that the percentage returns to investment were highest at the retailer's stage and lowest at the commission agent's stage.

VARIATIONS IN SUPPLY-PRICE EFFICIENCY IN VERTICALLY INTEGRATED GROWER'S CO-OPERATIVE VS. REGULATED MARKET SYSTEMS OF SUGARCANE

Darsi V.S. Rao†

The shifts in the volume of supply and farm harvest prices of grower's co-operative and regulated markets of sugarcane at Anakapalle (Andhra Pradesh) were studied by supply-price indices and variance ratio. Though the supplies to both the markets fluctuated widely, the price fluctuations in the grower's co-operative market were at a minimum level while in the regulated jaggery market wide variations were noted. A year lag is required for price adjustment in the regulated market. The producer's share in the wholesale price of jaggery was 85.74 per cent while the producer's share in the co-operative market was 49 per cent of the manufacturer's price. The manufacturer's share in sugarcane processing declined in the 1980s due to low price realisations from sugar sales. The conversion of one ton of sugarcane to sugar fetches more price than jaggery. However, the producer's share in manufacturer's price was greater in the case of jaggery than for sugar, whose share varied between 35

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and 55 per cent only. The farm harvest prices paid by the cane grower's co-operative society were 37 per cent above the minimum statutory cane price announced by the government during 1975-76 to 1983-84 and stabilised the price fluctuations compared to the regulated market. They were 20 per cent above in the mid-1970s and in the early 1980s about 40 per cent above the minimum statutory cane price on the average.

PRICE SPREAD IN MARKETING OF COCONUTS IN THE KONKAN REGION OF MAHARASHTRA STATE

H.I. Dalvi, H.N. Patil and S.G. Borude*

Existing agricultural marketing system in India is very often viewed as exploitative. It is alleged that the intermediaries in the marketing system make abnormal profits at the expense of the producers and the consumers. These allegations are at best based on circumstantial evidence from the nature of marketing environments faced by the farmers and the traders. There are very few empirical studies on this subject available so as to warrant such a generalised allegation or to refute it. The study of marketing costs and returns to the various intermediaries dealing with coconuts in Maharashtra State is one such attempt. An attempt is made to study the marketing channels, marketing costs, marketing margins and price spread to determine the producer's share in the consumer's price in the different channels of marketing of coconuts in Maharashtra State. The area under coconut in Maharashtra is 10,400 hectares of which nearly 77 per cent is in Sindhudurg district of Konkan region. In view of this, six villages having maximum area under coconut were selected purposively from this district. For the study, 72 growers and 41 market functionaries were selected randomly from the district. The requisite information was collected by the survey method for the year 1984. The price spreads were worked out by using the mode method, while marketing margins were calculated by lagged method.

In the present study of marketing of coconut, four channels, *viz.*, channel I, producers – consumers (direct sale), channel II, producers – co-operatives – consumers (co-operative sale), channel III, producers – wholesalers – retailers – consumers (sale through middlemen) and channel IV, producers – village merchants – consumers (sale through village merchants) were observed. Among these channels, the maximum quantity of coconuts (82.36 per cent) was sold through channel III, while the minimum (0.70 per cent) through channel II. It was revealed that the cost of marketing of coconut was the highest (Rs. 71.80/bag) for channel III, whereas it was the lowest (Rs. 15.13/bag) for channel I. Among different market functionaries, the maximum cost of marketing per bag of coconut was borne by village merchants (Rs. 36.58), followed by wholesalers (Rs. 31.03), retailers (Rs. 27.23), co-operatives (Rs. 26.76) and producers (Rs. 24.51).

The producers' share in the consumer's rupee was the highest (95.10 per cent) in channel I and the lowest (59.70 per cent) in channel III. The maximum marketing margin (40.30 per cent) was observed in channel III and the minimum (4.84 per cent) in channel I. Thus, out of the four channels observed in the marketing of coconuts, direct sale to consumer is the most profitable and the one through the wholesalers, the least. The system of direct sale to the consumers, though profitable, may not be perfectly a feasible proposition for most of the growers. Co-operatives must, therefore, be encouraged to come forward in the marketing of coconuts so as to safeguard the interest of both the producer-sellers and consumers.

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CHANGING INPUT-OUTPUT PRICES VIS-A-VIS CROP PRODUCTIVITY IN HARYANA

U.K. Pandey, D.D. Gupta, K.S. Suhag and Veena Manocha†

Based on secondary data colected from *(a)* Statistical Abstracts of Haryana and *(b)* Farm Management Advisory Service of the Haryana Agricultural University (which publishes districtwise bi-annual data on the economics of various crops), the present study has attempted to examine the changing pattern of inputs use and their cost, changes in factor-product price relationships and its impact on crop yields and returns. The study mainly pertained to three periods, *i.e.*, 1967-68, 1977-78 and 1983-84. To study the pattern of inputs used and their cost structure, two major crops of Haryana State, namely, bajra in *kharif* and wheat in *rabi*, were selected. The results obtained from the analysis of data revealed that the cost of production has considerably increased mainly due to increased prices of purchased inputs, adoption levels of various farm inputs together with rental value of land. Therefore, the major aim of price policy should be to ensure remunerative relationship between the prices of purchased inputs and the prices of commodities that farmers sell (the farm harvest prices over bulk-line cost do not safeguard farmer's interest). In order to achieve the public objective of bringing down the prices of agricultural commodities by increasing agricultural production, a production oriented price policy is a must – a price which leaves a reasonable margin of profit, not only for making improvements on the farms but also for meeting the farmer's aspirations of a better standard of living. Such a price policy would not only create an atmosphere of higher returns but also develop some confidence and faith among farmers for intensive use of productive inputs so as to accelerate the agricultural production in the country. However, to check continuous rise in the prices of cereals, a downward adjustment of the prices of inputs is also a must.

PRICE STRUCTURE AND PRICE SPREADS IN POTATO IN PUNJAB

Balwinder Singh*

The present study is an attempt to examine the price structure and price spreads of potatoes in the Punjab markets. The trends in arrivals and prices during the past two decades showed that there was an increase of about 28 thousand quintals per year. The prices increased by about Re. 1.72 per quintal of potatoes per year. It was also noted that in spite of the rising trend in the arrivals of potatoes, its prices were also increasing which could be attributed to the increased demand of potatoes as a result of increasing population, general economic development, increasing per capita income of the State and changing food habits of the people. The study brought out that the lowest seasonal index of arrivals was observed in the month of July (54.0) and the highest in December (226.63). The comparative seasonal index of prices was minimum in December (74.07) and maximum in October (127.38). This analysis could be useful by the potato growers for choosing the best time for sale of potatoes.

The price differentials did not exceed the cost of transportation and handling for most of the months. Also the high coefficient of variations among the producing markets and between the producing and consuming markets indicated the competitive nature of the potato markets. The share of the intermediaries in the consumer's rupee was comparatively high as

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27 per cent of it was absorbed in the marketing channel. This could be reduced if the potato growers form their own co-operatives and sell their produce after grading and standardisation.

PRICE SPREAD OF WHEAT: SOME OBSERVATIONS AT A MACRO LEVEL

N.V. Namboodiri†

Agricultural price policies are strongly influenced by the changes in the general level of farm prices particularly that of foodgrain prices. It is generally believed that a rise in agricultural prices redistribute income away from the consumers to the producers. However, a higher price paid by the consumers do not necessarily imply a transfer of income from the consumers to the producers unless the change in the marketing margins are known. The purpose of this study is to understand the nature of price spread of wheat in a macro framework in two different market environments, *viz.*, a rapidly expanding supply position with high rate of marketable surplus as opposed to a near stagnant supply position with low marketable surplus. In order to examine the above, two States, namely, Punjab and Madhya Pradesh were chosen as the market environment in them are precisely of the above nature. The major objectives of this study are to examine (1) the retail-farm gate price spread of wheat and its trend during the period 1970-71 to 1980-81 and (2) the change in the producer's share in the consumer's rupee.

Some of the important conclusions emerging from the study are: In Punjab, though there was a rapid growth in the production of wheat accompanied by a high rate of maketable surplus, the amount of wheat subjected to private trade remained almost unaltered during the period 1970-71 to 1980-81, and it was even lower than that in Madhya Pradesh. The behaviour of wheat prices at different levels, *viz.*, farm gate, wholesale, and retail in Punjab had a more systematic pattern than in Madhya Pradesh. The marketing margin as a per cent of farm harvest prices appears to be stabilised at a level of 20 to 25 per cent in Punjab. However, in Madhya Pradesh, it ranged between 6 to 36 per cent. The price of wheat at farm gate to retail, and wholesale to retail exhibited certain degree of inverse relationship in Punjab, implying that the higher the farm gate price or wholesale price, the lower the marketing margin and vice versa. In order of magnitude, the producer's share in the consumer's rupee did not indicate any noticeable change in the magnitude of producer's share in the consumer's rupee during the period 1970-71 to 1980-81.

STUDY OF CHANGING PRICE STRUCTURE OF WHEAT IN UTTAR PRADESH

M.P. Azad, Ram Iqbal Singh, M.P. Khanna and R.N. Yadav*

The present study was undertaken with the following objectives: (1) to study the extent of marketable and marketed surplus, (2) to determine the magnitude of price structure under various marketing channels and (3) to analyse the effect of seasonal and temporal variations

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in prices on price structure. Multi-stage random sampling design was followed in the selection of a sample of 100 wheat producers from ten villages of Baniakharha block in district Muradabad in Uttar Pradesh, The study was conducted during 1980-81. Marketing information and price data were collected from Chandausi regulated market and from a study on "An Outlook of Indian Economy, 1984". The main conclusions of the present study are as follows:

The marketed surplus of small and middle group farmers was significantly higher than that of big farmers and constituted a higher proportion of total production of wheat sold under distress sale in the villages, A higher percentage of marketed surplus of wheat of almost all the small and middle group farmers along with a few big farmers was marketed immediately after harvest, receiving low prices during peak season as compared to mid and lean season, as the difference in the wholesale and retail prices during the lean season was observed to be significantly higher than those in the peak season. Simultaneously, the consumers were also adversely affected by purchasing at higher prices in the lean season in comparison to peak season. The value of coefficient of dispersion in channel I (village sale) was observed to be significantly higher, being 9.68 per cent than in channel II (market sale) and channel III (procurement centre), being 7.09 and 8.30 per cent respectively, revealing thereby that the magnitude of price structure of wheat was wider in channel I than in channels II and III. The difference in wholesale price during peak season and retail price during lean season exceeded the cost of storage and other marketing charges which in turn affected both the producers and consumers adversely. The compound growth rate of wholesale price of wheat was observed to be maximum, being 8.53 followed by government sale price at fair price shop, consumer's price (retail price) and procurement price, being 7.49, 7.33 and 4.71 per cent respectively. The low compound growth rate of procurement price of wheat and higher government issue price have hampered the farmers adversely. Eventually, the gap in prices becomes more and more, which causes suffering both at the farmer's and the consumer's level. It is the government policy which has extended the magnitude of price structure of wheat at its own level, which was significantly higher as compared to open market. The compound growth rate of consumer's price index was found to be significantly lower than the issue price index at fair price shop. The magnitude of price structure and soaring prices have benefited the trading community at the cost of producers and consumers due to lack of infrastructural marketing facilities available to the producers. The study offers a few suggestions for promoting wheat trade and optional distribution, for encouraging wheat production and for reducing the magnitude of price spread.

CHANGING PATTERN OF GROWER'S SHARE IN CONSUMER'S RUPEE IN POTATO IN DISTRICT FARRUKHABAD (U.P.) - (A CASE STUDY)

B.K. Gupta, Om Prakash and H.K. Nigam†

The present study aims to examine the changing structure of marketing cost and the potato grower's share in the consumer's rupee and to work out the cost of storage per quintal of potato in district Farrukhabad in Uttar Pradesh at different points of time. It is based on an intensive enquiry of 100 potato growers selected randomly from ten villages situated in the vicinity of Farrukhabad city, commonly known as 'Pahara' area. The study was conducted on the same sample farms during the years 1971-72, 1975-76, 1978-79, 1980-81, 1982-83 and 1983-84. The data on marketing were obtained from Farrukhabad Potato Mandi which

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is a regulated one. The data regarding cost of storage were collected from five cold storages selected randomly from Farrukhabad city.

The marketing cost per quintal of potato in Farrukhabad Potato Mandi came to Rs. 6.97 in 1971-72, Rs. 5.35 in 1975-76, Rs. 5.75 in 1978-79, Rs. 7 in 1980-81, Rs. 8.35 in 1982-83 and Rs. 9.05 in 1983-84. The increase in the marketing cost during recent years was associated with the increase in transport cost, octroi, palledari, etc. The potato grower's share in the consumer rupee in the selected mandi came to 61.64 per cent in 1983-84 as against 69.30 per cent in 1975-76, 53.89 per cent 1978-79, 64.66 per cent in 1980-81 and 63.04 per cent in 1982-83. These variations in the grower's share in different years were mainly due to changes in marketing costs. The cost of storing per quintal of potato gradually increased from Rs. 20.45 in 1975-76 to Rs. 23.50, Rs. 28.45, Rs. 31.90 and Rs. 34.90 in 1978-79, 1980-81, 1982-83 and 1983-84 respectively. It may be concluded that the lack of storage and processing facilities for potatoes in the study area resulted in forced sales of the produce particularly by the small farmers which in turn resulted in a low share for the grower in the consumer's rupee.

CROP PRODUCTIVITY AND THEIR TERMS OF TRADE IN RAJASTHAN STATE – 1957 TO 1981

G.D. Diwakar*

An attempt has been made in this paper to document and analyse the growth rate of agricultural crop productivity, trends in agricultural prices and their terms of trade with different commodities and prices of inputs in pre-and post-green revolution periods in Rajasthan. The data revealed that a higher growth rate with low annual variation in productivity and higher yield was discernible for maize, rice, wheat, gram, rape and mustard and groundnut in the post-green revolution period except for sesamum. In aggregative term, cotton, sesamum, rape and mustard, bajra and rice registered higher instability in their productivity as compared to other crops. The prices of all the major commodity groups shot up since 1958. The rate of price increase was the highest for edible oil, followed by pulses, sugar and gur and cereals. Pulses and edible oil groups registered continuous acceleration in prices whereas in cereal and sugar groups, a sinuous pattern was observed.

Price parity ratios revealed that the cereal group had adverse terms of trade in the pre-and post-green revolution periods compared to general prices. Parity ratios of pulses with general prices were compatible since 1965. The strongest compatibility in parity ratios was discernible in the case of edible oil and sugar groups with slight drips. The price parity ratios of cereals with industrial raw material and manufactured goods were found unfavourable in the pre-green revolution period and during 1976 to 1981. In the case of pulses, the terms of trade were not favourable during the pre-green revolution period only. Price parity ratios of edible oil and sugar and gur with the above commodities were found to be considerably higher. Parity ratios of all the groups of commodities with fertilizer and electricity were found higher. Hence, the terms of trade of the above commodities were found favourable in both the periods. However, the same was not true with diesel in the case of cereals and pulses except for a few years. The adjusted base parity prices of wheat, barley, jowar, maize, gram and rape and mustard were estimated to be Rs. 176, Rs. 136, Rs. 149, Rs. 140, Rs. 142, Rs. 223 and Rs. 375 per quintal respectively for the year 1982-83 which are higher than the procurement price fixed by the Government of India. If the above situation continued, there is every likelihood that both direct and indirect elements of agricultural production policies would result in stagnation of production and investment.

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CHANGING SHARE OF THE GROWERS IN THE CONSUMER'S RUPEE IN MARKETING OF GROUNDNUT IN DISTRICT UNNAO (U.P.) (A CASE STUDY)

Anant Ram Verma†

An attempt is made in this paper *(i)* to estimate the marketing costs and margins in the marketing of groundnut, *(ii)* to work out the price spreads in the marketing of groundnut, *(iii)* to examine the seasonal fluctuation in the prices of groundnut. The enquiry was conducted by survey method at two points of time, *viz.*, 1974-75 and 1984-85. The findings are based on an intensive enquiry of 100 groundnut growers, selected randomly from ten villages in the Bangarmau block of district Unnao, Uttar Pradesh. This block was selected purposively as it had the highest area under groundnut in the district. The Bangarmau mandi is a secondary market and the biggest consuming centre in the district. Five per cent of the market functionaries in the mandi were interviewed personally for the collection of information on the marketing of groundnut. The data on marketing charges, cost of processing and arrivals and prices, etc., were collected from different market functionaries involved in the marketing of groundnut in the mandi. The marketing cost including processing cost per tonne of groundnut in the mandi came to Rs. 960.95 in 1974-75 as against Rs. 1,264.50 in 1984-85. The producer's share in the consumer's price of groundnut for oil preparation came to 65.93 per cent in 1974-75 as against 69.95 per cent in 1984-85. The low producer's share was mainly due to higher transport and processing cost, on the one hand, and higher middlemen's margin, on the other. The increase in the share of the producer in the prices paid by the consumers in 1984-85 over 1974-75 was mainly due to a reduction in the middlemen's margin, on the one hand, and increased efficiency of marketing due to market regulation, on the other. The average cost of processing of groundnut for oil preparation came to Rs. 7.55 per quintal in 1974-75 and Rs. 13.30 per quintal in 1984-85, which varied from mill to mill according to the level of capital investment, power and raw material processed during the year by a mill. The adjusted seasonal index for arrivals of groundnut in Bangarmau market (1981-82 to 1983-84) was the highest in the month of December (400.54) and the lowest in the month of September (2.14). It was observed that the market arrivals of groundnut gradually increased from the month of October (21.27), November (222.90) and reached its peak by December (400.54), January (280.55), February (194.62) and March (45.84). The adjusted seasonal index of prices of groundnut reached its peak in the month of August (119.52) due to increased consumption for seed sowing purposes. The minimum adjusted seasonal index in the months of October (75.93), November (82.87), December (95.21) was due to the smaller consumption and distress sales among the wholesalers and millowners and competition between them, at a lower price.

Special emphasis on post-harvest technology including storage of groundnut at farm level, agricultural processing and development of integrated marketing structure are needed. Efforts have been made to strengthen the activities of primary marketing societies under the integrated pattern of rural credit. Further encouragement should be given to primary multipurpose co-operative societies and marketing societies to expand their capacity at the primary and regulated market levels.

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PRICE SPREAD IN VEGETABLE MARKETING

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The present study has been undertaken in six villages spread over three blocks around the twin cities of Hyderabad and Secunderabad with the specific objective to estimate the price spread in the marketing of five important vegetables. In all, 72 sample farmers, three vegetable markets, five vegetables, 60 commission agents and two retail markets constituted the material for the study for the agricultural year 1980-81 for production costs and August-September, 1981 for the study of price margin. Among the five vegetables, namely, tomatoes, brinjals, green chillies, ridge gourd and cluster beans, while the cost of cultivation per hectare was highest (Rs. 4,626) for green chillies, the gross returns were maximum for tomatoes. The analysis highlighted the profitability of vegetable cultivation under current farming conditions. Price spread was estimated by concurrent margins approach. The then prevailing prices at the successive stages of marketing on the same day were taken and the margins worked out. The analysis indicated that the profit margins of the intermediaries, particularly of the retailers were much higher than the net share of the consumer's rupee received by the producer. The distressingly low share of the consumer's rupee received by the producer can be attributed to dominant impact of credit-linked marketing system operated ruthlessly by commission agents. The silver lining can be provided either by the co-operatives or the nationalised banking sector by providing adequate and timely production credit as a counter to credit-linked marketing system. The feasibility of crop insurance as a price stabilisation measure not as a yield guarantee but as a price guarantee measure especially during glut situations, cannot be over-estimated.

ARECANUT MARKETING – AN ANALYSIS OF GROWER'S SHARE IN CONSUMER RUPEE, PRICE SPREAD AND MARKET INTEGRATION

Gopal Naik and V.P.S. Arora†

An attempt has been made in the paper to analyse the grower's share in the consumer rupee, price spread and the degree of integration in an arecanut marketing system. For grower's share and price spread the complete market network for Sirsi (an important Karnataka market for arecanut) was studied while for market integration various important primary and secondary/terminal markets were studied. The study revealed that the percentage share of farmer-producers in the retail price prevailing at Nagpur and Kanpur, the important secondary/terminal markets for the produce, was 68.75 and 57.89 respectively. The difference was mainly on account of transportation cost. It was found that private wholesalers retained a higher margin than the co-operative institution. The net margin of retailers was found to be relatively much more than the cost incurred by them. A high degree of market integration is observed among the primary markets as well as among the secondary markets for arecanut. It is also observed that in Nagpur both the wholesale and retail markets are well integrated whereas the Kanpur market is not significantly integrated with the primary markets.

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CHANGING SEASONAL PATTERN IN FOODGRAINT PRICES AND THEIR STORAGE COST (A STUDY OF RAJASTHAN)

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The study was undertaken to examine the belief that the seasonal rise in prices of foodgrains is higer than the cost necessary to store them over a season. This difference is the indicator of the degree of market efficiency in the reverse direction. An attempt has also been made to identify the foodgrains in which seasonal rise in prices is extremely high and exceeds the storage and other costs. The study was confined to the six important foodgrains of the State of Rajasthan, *viz.*, wheat, barley, gram, jowar, bajra and maize. Data on monthly wholesale prices of the selected foodgrains for the period 1971-72 to 1979-80 were collected from the Directorate of Economics and Statistics, Rajasthan, Jaipur. Storage cost for various months/seasons for the selected foodgrains was worked out after obtaining data from warehouses and private storage owners. Intra-year price differentials were studied between seasons as well as in the months. Inter-seasonal and inter-month price differentials were worked out as the difference in the average price of the post-harvest season/month and the successive seasons/months of the year. Commodities having seasonal price differential greater than storage cost were identified using the formula $RS = [P_i - (P_t + C)]$. Probabilities of earning profit by selling foodgrains in different months were also worked out.

The average of ten years' data reveals that in none of the seasons, the inter-seasonal price differentials exceeded storage cost for wheat and bajra. Seasonal price differentials were greater than storage cost in gram in all the seasons. The inter-seasonal price differentials exceeded storage cost upto the second or third season in jowar, and maize. Thus the inter-seasonal analysis reveals that storage is not at all profitable in wheat and bajra but most profitable in gram.

The comparison of inter-month price differential and storage cost also indicates that no substantial returns exist for storage in wheat, bajra and jowar but returns to storage are decisively positive when barley is sold in August month (second season), maize in February, June and July (third season) and gram is sold in September through February (upto fourth season). These results provide evidence for the existence of some imperfections in the marketing of gram, jowar, maize and barley crops though no such evidence is available for wheat and bajra crop. The results thus discount the traditionally held general belief that seasonal price differentials are always greater than storage cost in foodgrains and the traders earn good profit by the storage of foodgrains. Profits can only be earned by astute trading. In gram, the opportunity of earning profits from storage in general is high.

GROWER'S SHARE IN CONSUMER'S RUPEE IN THE MARKETING OF GROUNDNUT IN DISTRICT HARDOI (U.P.): A CASE STUDY

G.N. Singh, S.D.S. Sengar and R.K.S. Kushwaha*

The present study was conducted at Madhoganj regulated mandi in Hardoi district in Uttar Pradesh during the year 1983-84. Ten per cent of the existing market functionaries were directly interviewed for working out the marketing cost. There were seven marketing

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channels involved in the marketing of groundnut, *viz.*, (1) producer-itinerant dealer/ village beopari – miller – wholesaler – retailer – consumer, (2) producer – commission agents – miller – wholesaler – retailer – consumer, (3) producer – commission agents – decorticator – wholesaler – retailer – consumer, (4) producer – decorticator – miller – wholesaler – retailer – consumer, (5) producer – miller – wholesaler – retailer – consumer, (6) producer – groundnut oil miller – vegetable oil miller – wholesaler – retailer – consumer and (7) producer – roaster – retailer – consumer.

Per quintal total marketing charges paid by the producer, mill owner, wholesaler and retailer worked out to Rs. 4.12, Rs. 30.98, Rs. 24.27 and Rs. 17.49 respectively. The processing cost involved in the processing of one quintal of groundnut by different processes amounted to Rs. 36.10 for oil mill, Rs. 209.41 for dalmot and Rs. 61.17 for roasting plant. The producer's share in the consumer's price in the marketing of processed groundnut products came to 58.48 per cent per quintal in groundnut oil, 31.31 per cent per quintal in dalmot and 59.87 per cent per quintal in roasted groundnut. The balance of the consumer's price was appropriated by the middlemen involved in the marketing and processing of groundnut.

The producer of groundnut like the producer of any other agricultural commodity is faced with many problems in the disposal of his produce which resulted in a low share in the consumer's rupee. During the course of investigation it was found that the producer was forced to sell his produce immediately after the harvest to meet his immediate needs for the payment of crop loan, rent, etc. In the market *kachcha arhatia* and weighmen mostly favoured the buyers who have the monopoly in respect of price settlement. Besides, there were no facilities for storage, grading and standardisation, well constructed market yard, public weighing centre, accommodation for the sellers, etc., in Madhoganj mandi. Usually the payment for the product is delayed. There is no organization of producers in the market which could protect the interest of the growers of the study area. The processing units are generally in the hands of large traders who enjoy a monopoly in the trade. These shortcomings need to be overcomed by introducing appropriate measures.

MARKET INTEGRATION AND ITS IMPACT ON GROUNDNUT PRICE IN WESTERN REGION OF MADHYA PRADESH

P.K. Awasthi, P.Atkare and S.K. Gupta†

An attempt has been made in this paper to study the integration of markets and their impact on price structure of groundnut in the western region of Madhya Pradesh. The main objectives of this study were *(a)* to examine the trend and seasonal fluctuations in the prices of groundnut, *(b)* to examine the relationship between arrivals and prices of groundnut, and *(c)* to examine the extent of price integration of groundnut between different markets. The study is based on secondary data collected from the Indore, Khargone and Sanawad market records for the period 1972-73 to 1981-82. Seasonal fluctuations in the groundnut prices were studied through the technique of ratio-to-moving average while trend analysis, correlation coefficient and coefficient of variation were used to examine the relationship between arrivals and groundnut prices, and price integration of groundnut between different markets. The study has highlighted that there is abrupt and sudden decline in the price of groundnut just after the harvesting period while the price increases moderately upto the month of February. The price after this period increases substantially till August. The high degree of positive correlation in the selected markets indicated that the price of groundnut is positively related. It also provides a broad indication of the possibility of market integration.

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As regards arrival, it considerably exceeds production in Indore market. The reason that could be attributed to excess arrival is that it being a terminal market in the region, the flow of groundnut from other adjacent markets greatly determines the magnitude of arrival. The relationship between arrival and production of groundnut in the selected markets revealed that increase in production considerably governs the magnitude of arrival in the market. The association was relatively more pronounced (r = 0.03) in the terminal (Indore) and secondary (Khargone) market than in the primary (Sanawad) market (r = 0.101) There was variability in arrivals pattern between the markets in the same year. The maximum arrival was in the terminal market followed by in the secondary and primary market. The relatively greater magnitude of sale in the post-harvest period at the primary level provides a broad indication of distress sale at the village level. By regressing post-harvest arrival with time, it is found that there is a distinct decline in the post-harvest sale of groundnut over a period of time in all the selected markets. The magnitude of decline however varied from market to market. The decline was maximum in the terminal market followed by in the secondary and primary market. The finding thus broadly suggests that over a period of time there is an increase in the holding capacity of farmers, the magnitude of increase was however relatively less at the village level. The movement of groundnut prices in all the selected markets was positively related. The high degree of price correlation (greater than 0.90) in all the selected markets indicated that the markets were broadly integrated.

FARMER'S AND INTERMEDIARIES' SHARES: A STUDY OF RICE, WHEAT AND GRAM IN INDIA

K.N. Rai, J.C. Karwasra, R.K. Grover and Shri Niwas*

Rice, wheat and gram are the important foodgrains from the producer's and consumer's point of view in the country. Therefore, the present study attempts to analyse *(i)* the movements in farm harvest prices and retail prices of rice, wheat and gram, *(ii)* the receipts of the farmers and the intermediaries per quintal of these commodities and *(iii)* changes in the shares of farmers and intermediaries, in the consumer's rupee spent on these commodities. The study was conducted for different States and the country as a whole. At the national level, the trend analysis revealed that the increase in farm harvest prices was less than the increase in the retail prices in all the three commodities. In absolute terms the increase in the retail prices was higher than the increase in the farm harvest prices in all the three commodities and in all the States except Bihar where the situation was the reverse. Among the different States the farmers of Uttar Pradesh, Punjab and Haryana were found to be in a better position in regard to rice, wheat and gram respectively.

There was no uniform pattern of change in the producer's and intermediaries' shares among the different States for the commodities studied. Noticeably there was a sharp decline in the producer's share in Andhra Pradesh in the case of rice and in West Bengal in the case of gram. There was considerable increase in the producer's share in the case of wheat in the State of Bihar. In general, among the intermediaries, the wholesalers had an edge over the retailers.

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NET PRICE SPREAD OF PADDY/RICE IN REGULATED AND UNREGULATED MARKETING SYSTEM

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In this paper an attempt has been made to examine the net price spread of paddy/rice in Kanpur district of Uttar Pradesh for the year 1983-84. The specific objectives of the study were *(i)* to work out the net price spread of paddy/rice for important marketing channels in the regulated and unregulated marketing systems, *(ii)* to determine the marketing margins of various functionaries and *(iii)* to examine the marketing costs in both the systems of marketing. A multi-stage sampling design was followed. The study consisted of 40 farmers/producers, ten wholesale dealers, commission agents, millers, retailers and five other functionaries for each of the selected markets. Three marketing channels were considered. The main findings of the present study were as follows: The producer's share in the consumr's price in the marketing of paddy came to 86.38 and 82.03 per cent in the regulated and unregulated systems of marketing. In the case of rice it was 66.70 in the regulated markets and varied from 62.66 to 64.94 per cent in the unregulated markets. It indicated that the producer's share was higher in the regulated marketing system as a result of regulatory measures and other improvements introduced in the marketing conditions.

As regards the margins of different functionaries and marketing costs, these were lower in the regulated markets than in the unregulated ones. In the marketing of paddy, the margins of different functionaries varied from 1.34 to 2.75 per cent in the regulated markets and from 1.65 to 4.06 per cent in the unregulated markets. Similarly for rice, the margins of profit ranged between 1.04 and 8.21 per cent in the regulated and 1.73 to 9.35 per cent in the unregulatd markets. The cost of marketing for paddy came to 6.94 per cent and 9.15 per cent in the regulated and unregulated markets respectively while for rice it was 13.90 and 15.30 per cent in the respective markets. The distribution of marketing margins into its components indicated that the margins of the intermediaries accounted for nearly 49 per cent of the total price spread in paddy and 58 per cent in rice in both the regulated and unregulated markets. The cost of marketing accounted for 51 per cent in paddy and 42 per cent in rice marketing. A little variation in the percentage distribution of marketing cost to total marketing margins indicates the imperfections in the marketing conditions which need to be strengthened by regulatory measures. Of the total marketing cost, transportation accounted for the highest share followed by commission charges and palledari including weighing in both the regulated and unregulated markets. But the share was comparatively lower in the regulated markets due to fixed charges. Thus, it suggests that a comprehensive measure directed to reduce the marketing costs and margins of the intermediaries, improving marketing conditions and strict regulation of markets can only reduce the price spread and ensure better price to the producers.

PRICE STRUCTURE OF PINEAPPLE A STUDY IN MEGHALAYA

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Pineapple is one of the major commercial fruit crops of Meghalaya grown mainly in the hill slopes and flat valleys. East Khasi Hills is the largest pineapple growing district in the State. A

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study was undertaken to study the production, marketed surplus and marketing channel, the role of market functionaries and price spread at different stages. A total of 60 pineapple growers from eight villages of East Khasi Hills district were randomly selected and interviewed in 1983. About 95 per cent of the produce was sold and only 5 per cent was consumed at home. The data on market prices were collected from Nongpoh and Shillong in Meghalaya and Gauhati in Assam as these three are the major marketing centres for Meghalaya pineapple. Tracing through the marketing system, costs and margin at different levels are collected from different market organizations. The marketing agencies carried out the marketing functions through three channels : *(i)* producers – trade agents – retailers – consumers, *(ii)* producers – trade agents – wholesaler – retailers – consumers and *(iii)* producers – retailers – consumers. The operational efficiency of trade agents was found to be the highest (87.14 per cent) and only 12.86 per cent of the produce was sold by the growers directly to the retailers. The growers have very little option for selective distribution policy as they have to rely mainly on the trade agents for the sale of their produce. The price spread worked out for channels I and II indicated that the producers' share of the consumer's rupee was 25.72 per cent as the produce was sold to the trade agents in both the channels. In channel I, the trade agents' margin was estimated at 22.38 per cent, the retailers' margin at 28.10 per cent and marketing, transportation and handling charges, etc., at various stages were 23.80 per cent. In channel II the trade agents' margin was reduced to 21.90 per cent, the wholesalers earned 10.48 per cent and the retailers could make only 13.34 per cent. The marketing charges, etc., went upto 28.56 per cent. In channel III the growers could fetch 43.90 per cent of the consumer's rupee, the net margin of retailers was 39.02 per cent and marketing charges, etc., accounted for 17.08 per cent.

The analysis indicated that a major share of the consumer's rupee is enjoyed by the trading community who exploited the poor farmers and made handsome profit. The existing level of the growers' share is expected to be increased by organizing growers' co-operative with cold storage facility. State intervention in the fixation of procurement price is felt essential to help the growers to obtain remunerative prices. The North-Eastern Regional Agricultural Marketing Corporation (NERAMC) is taking up procurement of pineapple and is expected to provide new incentive to the growers by undertaking conventional and scientific marketing system.

A STUDY ON FARM HARVEST PRICES IN HARYANA

Himmat Singh and V.K. Singh†

An attempt has been made in the present study to examine the behaviour of farm harvest prices of 11 important crops of Haryana since the formation of the State in 1966. The analysis is based on the secondary data collected from the Statistical Abstract of Haryana for the years 1966-67 to 1983-84. The study revealed that the absolute harvest prices of cotton *(desi)*, gram, maize, *toria*, paddy and jowar in 1981-84 were more than two times higher as compared to their prices in 1966-67 and 1970-73. However, in comparison to 1975-78 prices, it was true only in the case of gram. The ratios of prices in 1981-84 to prices in 1966-67, 1970-73 and 1975-78 were more than unity for all the crops which indicated that there has been an increase in the absolute prices of these crops throughout this period. But these were found increasing at a decreasing rate. Surprisingly, in spite of an increase in the absolute prices of all crops, the real price (purchasing power) of gram, rapeseed and mustard, *toria* and cotton *(desi)* has tended to decline over time. In spite of the compound rate of increase

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in sugarcane (gur) prices being the lowest (3.30 per cent per annum), its real price was found to be increasing. This requires the attention of all those who are associated with the agricultural price policy decisions particularly in the case of pulses (gram), oilseeds (rapeseed and mustard, *toria*), cotton and sugarcane crops. The study further showed that the current year's production had an insignificant effect on current year's harvest prices in all the crops except barley, jowar, sugarcane (gur) and cotton. The coefficients of production on harvest prices were found negative in the case of paddy and barley. However, the coefficients of time (trend) on harvest prices were positive and statistically significant. Time and production together explained 69 to 90 per cent of the variations in harvest prices of different crops.

INPUT-OUTPUT PRICE RATIO AND FACTOR PRODUCTIVITY (A CASE STUDY OF NAGULAPALLI VILLAGE WITH REFERENCE TO MAJOR CROPS GROWN)

T. Hanumantha Rao*

An attempt is made in this paper to work out the input-output ratios for the major crops in the Nagulapalli village in Visakhapatnam district of Andhra Pradesh as indicators of technological levels of production, to examine the differences in the ratios, to analyse the price and non-price factors responsible and to suggest policy prescriptions. The data presented in this paper were collected from the selected village which is two miles away from Anakapalle town where the Sugarcane Research Station is located. For the selection of sample units, a list of farmers in the village was prepared and the farmers were stratified into three size-groups, small, medium and large. From each size class 20 random samples were taken. The data show that the major crop complex in this region and among the different types of cultivators is sugarcane, paddy and gingelly followed by other crops which include *ragi*, bajra, etc. Sugarcane is the predominant crop among different size-groups and it is converted into sugar and gur. The data further show that the cost of cultivation per acre for all crops has a tendency to decline with an increase in the farm size. But the gross and per acre gross income have a tendency to rise with an increase in the farm size. Other things being equal, a preponderance of high value and high-yielding crops like sugarcane and paddy in the cropping pattern is reflected in a higher level of growth rate. Similarly, the input-output ratios for all crops show an increasing trend along with an increase in the size of farms, indicating that the larger farms appear to be more efficient than the smaller farms.

The inquiry reveals that the input-output ratio is higher in the case of sugarcane when diverted to jaggery in spite of heavy input costs than those of other crops like paddy, gingelly, *ragi* and bajra because jaggery price is more remunerative than the price of sugar. The reason is obvious. The policy of the government in regard to minimum suport prices, procurement prices and issue prices for a number of agricultural commodities like sugarcane, paddy, etc., leaves much to be desired. Further in the case of jaggery, the merchants pay cash immediately and the farmers are happy at the immediate realisation of money. Also, the other factors like delay and the time wasted in waiting at the factory to get the money has made the farmers opt for jaggery crushing. In the ultimate analysis, the disproportionate increase in the prices of inputs reducing the real income and changing the terms of trade calls for formulating an appropriate price policy which should remain as a sheet-anchor to maintain parity between input and output prices to enable the farmers to use improved technology.

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FARMER'S SHARE IN CONSUMER'S RUPEE: AN ANALYSIS OF OPERATIONAL AND DISTRIBUTIVE EFFICIENCY OF IMPORTANT FOOD-GRAINS IN THE MUZAFFARPUR DISTRICT OF BIHAR

S.P. Sinha and Jagdish Prasad†

An attempt has been made in this paper to examine the operational and distributive efficiency of the farmer's share in the consumer's rupee of two important foodgrains, namely, rice and wheat in a regulated market of North Bihar. The present study,therefore, proposes to examine the following specific hypotheses: *(i)* The larger the farmer's share, the greater the operational efficiency in the marketing system and vice versa. *(ii)* The larger the difference in the share in the consumer s rupee between different categories of farmers, the lower the distributive efficiency in the marketing sytem. And *(iii)* the prices received by the marginal and small farmers are significantly lower than those receivd by the medium and large farmers. An attempt is made to examine these hypotheses with the help of data collected by a survey of 80 farmers, 6 village merchants, 5 itinerant dealers and 10 wholesalers/ commission agents from the Muzaffarpur district of North Bihar. The selection of the farmers was made according to stratified random sampling, strata being based on the size of holding.

The study indicates that the marginal, small and medium farmers sell a very large proportion of their total sales at the village level and to the village merchant and itinerant dealers as compared to large farmers. The operational efficiency of the farmer's share in the consumer's rupee has been estimated by the ratio between the price received by the farmers and the total price spread. The results indicate that the operational efficiency is just around 25 per cent in rice and 26 per cent in wheat which shows disabilities that are common to all categories of farmers. However, the analysis of the distributive efficiency indicates that the disabilities are more significant in the case of marginal and small farmers, than those of medium and large farmers. This results in higher prices for the large farmers and lower prices for the small and marginal farmers. Such systematic differences in the price received by the different categories of farmers clearly reflect that the present farm price structure along with the marketing system is biased against the marginal and small farmers. The study thus suggests that in order to promote efficient grains trade and optimal farm price structure as well as to encourage increased agricultural output, there may be an organization of farmers particularly marginal and small farmers, which may not only provide the facilities for bringing their produce at the main market yard, but may also create such marketing facilities which may promote free and direct trade without the intervention of the various market intermediaries. Some regulatory measures may be strictly enforced for ensuring the farmers at least the support price which will substantially increase the farmer's share.

AN ANALYSIS ON FARM AND RETAIL PRICES OF RICE

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This paper studies the relationship of farm harvest prices and retail prices of rice in Thanjavur district in Tamil Nadu during the period 1950-51 to 1980-81. It also examines

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the behaviour of the share of the farmer in the consumer's rupee. A model based on a system of first order simultaneous difference equations has been made use of. The data used relate to farm harvest price and retail price of 'rice-second sort' of Thanjavur district, the leading rice producing region in the State. The data have been taken from the 'Season and Crop Reports' of Tamil Nadu. The empirical results reveal that an increase of one rupee in the farm harvest price of a particular year pushes up the farm harvest price of the next year by 54 paise and the retail price of the next year by Re. 1.04. This shows that the retail price is growing at a faster rate than the farm harvest price. The growth rate of the ratios of farm harvest price to retail price has been considered for assessing the share of the grower in the consumer's rupee. The growth rate is found to be positive, but not significant for the total period considered, *i.e.*, 1950-51 to 1980-81. However, between 1960-61 and 1970-71, it is seen to be significantly positive. For the period 1970-71 to 1980-81, the growth rate became negative, indicating that the share of the producer in the consumer's rupee declined. It seems that in the case of 'rice-second sort' of Thanjavur, increase in the retail price has not yielded proportionate benefits to the farmer. Stricter implementation of present policies and introduction of newer measures may be necessary to bring the due benefits to the farmer

STUDY OF FARM PRICES IN THE MARKETING OF FCV TOBACCO IN INDIA

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An attempt is made in this paper to examine the farm price of FCV tobacco and compare it with other prevailing prices at different levels of tobacco marketing to understand their correlation and impact on the farmers' economy. It is observed that while the farmers' returns remained static and non-remunerative, the other prices operating in tobacco marketing such as buying prices, minimum export prices and free on board prices have shown an increasing trend during the period 1977 to 1982. In the same period, the wholesale price index has also gone up considerably. The traditional grade standards ('V' grades) followed by the farming community and their respective prices are the basis for the present study. Since scientific grades (Agmark grades) alone are followed for the pricing pattern at the export level, their compositions of all the 'V' grades are taken into account and the respective prices are calculated for the purpose of better comparison with all other prices. The non-correlative price structure has been a great economic setback to tobacco farming. The unscientific and traditional practices adopted by all the market functionaries in the domestic and international spheres have been found responsible for such a situation in the marketing of tobacco in India. Measures to overcome the difficulties have been put forth in the concluding part of the paper.

SIMULTANEOUS IMPACT OF SEASONAL FLUCTUATION AND LONG RUN TREND OF PRICES ON THE PATTERN OF RURAL DEVELOPMENT IN WEST BENGAL

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The present paper aims to consider how small and substantial cultivators are affected in different ways by the simultaneous effects of rising trend of general prices and sharp seasonal

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price fluctuations of agricultural commodities and their total impact upon the general development pattern of the cultivating communities. As buyers, big and small cultivators are subjected to almost equal price trend, but as sellers their incomes largely differ, depending on their withholding capacities of their products after harvest, owing to sharp fluctuation in seasonal prices of the major crops. A survey covering seven villages around the market of a rural town Bolpur in West Bengal presents the monthly distribution of the cultivators, sale prices of crops and the percentage of the products sold in each month. The analysis of data by weighted annual averages of the sale prices reveals that substantial cultivators received some 15 to 25 per cent higher prices for their products consistently for all the crops than the smaller cultivators. Now in the face of all-India rising trend for all prices at the simple rate of 20.33 per cent and at the compound rate of 7.66 per cent since 1961, real incomes of all earners are rapidly declining unless these are compensated by other means. Like D.A. provision for service holders, big cultivators' loss in income is compensated by trade and other means whereas small cultivators have no common means to supplement income other than wage earning on others' land during cultivating seasons, which further lowers their income from their own cultivation. Thus by constant fall in real income due to a rising trend of general prices and invariably lower return from the sale of their own products, small cultivators are becoming poorer day by day. On the other hand, big cultivators are not only receiving higher prices for their own products due to their withholding capacities, but they are also increasing their incomes by withholding the products of small cultivators procured at low prices just after harvest. Thus a polarisation trend is observed among the present cultivating classes of West Bengal.

INPUT-OUTPUT PRICE RELATIONSHIPS AND THEIR IMPACT ON THE CROPPING PATTERN OF KERALA

P. Rajasekharan†

In this paper an attempt has been made to examine the changes in the cropping pattern of Kerala over the years using time-series analysis. For this analysis, six major crops, *viz.*, rice, tapioca, banana, coconut, rubber and pepper have been selected which occupy 80 per cent of the total cropped area in 1982-83. The whole period from 1960-61 to 1983-84 was divided into two periods, *viz.*, (1) from 1960-61 to the mid-seventies (the year of maximum production) and (2) from the mid-seventies upto 1983-84. Linear growth rates have been worked out for area, production and productivity for the corresponding two periods for each crop. The production response to prices, relative price movements of competing crops, relative income from different crops and real cost of inputs were also worked out.

The analysis of six major crops for 24 years has shown a shift in the cropping pattern from food crops to cash crops mainly rubber due to changes in relative price, relative income, and input-output price ratios in favour of plantation crops. Adverse factor-product price relationship seems to have contributed to the decline in paddy area, and reduced use of fertilizer in the State. Stability in the relative price of competing crops, some amount of input-output price parity, cost effective methods of production, introduction and expansion of technology and the development of infrastructural and marketing facilities are the major policy implications emerging out of this study. Government should devise production oriented price policies aiming at rational utilization of scarce resources, producing an optimum cropping pattern for the State and protecting the interests of producers as well as the consumers. Such a long-term outlook seems to be lacking in the present policy of the State.

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PRICE TRENDS AND PRODUCER'S SHARE IN CONSUMER'S RUPEE IN POTATO, DISTRICT FARRUKHABAD, U.P.

Y.S. Chauhan, D.S. Shukla, Ram Kumar Singh and Ajay Kumar Singh*

The main objectives of the paper were to study the trends of prices and arrival of potato in Farrukhabad mandi and to work out the producer's share in the consumer's price in different years. The data were collected from 75 randomly selected farmers from five villages of Sardar tehsil in Farrukhabad district, Uttar Pradesh. Twenty cold storages and mandies were visited frequently to find out the price trend and marketing problems. The study related to the year 1984-85. It was observed that the price of potato was high in the month of June and it was lowest in the month of January in the year 1982-83 while the price of military potato was high in the month of November and lowest in the month of January in 1983-84. The price of potato in the year 1984-85 remained very low. The study indicated that the producer's share in the consumer's price at Farrukhabad potato mandi was 66.92 per cent in 1980-81, as against 69.30 per cent in 1975-76 and 52.85 per cent in 1978-79. In 1984-85, it was only 37 per cent due to heavy fall in prices. This was a very bad year for the potato growers in living memory. The marketing costs and margin accounted for 30.70 per cent, 46.11 per cent, 33.08 per cent, 62.91 per cent in 1975-76, 1978-79, 1980-81 and 1984-85 respectively. The marketing cost borne by the producers came to 10 per cent and by the wholesalers and retailers 13.09 per cent in 1980-81. From the study, it may be concluded that the potato growers do not get a remunerative price for their product. The government should introduce a crop insurance scheme and take over potato trade with the help of co-operative marketing societies.

INTER-TEMPORAL AND INTER-SPATIAL BEHAVIOUR OF OUTPUT-INPUT PRICES OF SOME PRINCIPAL CROPS – AN ECONOMETRIC ANALYSIS

K. Sain and D. Dhar†

A balance between prices of output and input of farm products is indispensable for ensuring steady agricultural growth and for protecting the interest of the farmers and consumers alike. The objectives of this paper are *(a)* to examine the prices of some principal crops over recent years and in some specified zones, *(b)* to study the behaviour of prices of major inputs used in producing farm products over recent years, *(c)* to examine the ratio of revenue to costs of cultivation of some principal crops during recent years in certain specified zones, *(d)* to ascertain if there is any significant variation in prices of major crops over the years and among different zones, and *(e)* to project the behaviour of prices of principal farm inputs in some future date in order to know how much output prices will have to rise to catch up with input prices. The area of study is mainly confined to different agro-climatic zones of West Bengal covering the quinquennium 1977-78 to 1981-82. The data collected in connection with the implementation of the "Comprehensive Scheme: Cost of Cultivation", Government of India, in West Bengal are utilized in this exercise, besides other sources of data. Analysis of variance is used to see if there is any significant vartiation in output prices over

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time and space. The Markovian chain analysis through various State space is used to forecast probable price behaviour for farm inputs. Input prices for the five-year priod 1977-78 to 1981-82 are studied for each of the sixty months for the purpose of formulating transitional probability matrices in connection with the prediction process through the Markovian model. The findings of the study reveal that the prices of principal farm outputs of West Bengal varied significantly both over time and space. The prices of principal farm inputs demonstrated substantial inter-temporal and inter-spatial variations. The ratio of revenue to cost of cultivation of principal crops tended to decline. It is possible to predict fairly reliably as to how prices of major farm inputs will rise substantially over the years in different agro-climatic zones of a component State of India. The fiscal and monetary measures of the country should be suitably adjusted to maintain the desired balance between farm output and input prices to protect the interests of the growers and consumers and to ensure a steady growth rate for Indian agiculture.

PROCESSING AND MARKETING OF SUGARCANE PRODUCT (GUR) – A CASE STUDY OF MUZAFFARNAGAR DISTRICT

Bhopal Singh Rohal, M.K. Gupta and R.P. Singh*

In this paper an attempt is made to study the processing and marketing of sugarcane product, *i.e.*, gur in Muzaffarnagar district, a major sugarcane growing district in Western Uttar Pradesh relating to the year 1980-81. Sugarcane industry is a major source of employment and income to the skilled and unskilled persons of this region. The average cost of processing of sugarcane per quintal or manufacturing of gur is found to be Rs. 4.20. In channel I (producers to processors) the marketing charges paid by the processors are the highest, being 11.66 per cent of the price paid by the consumers as compared to the marketing charges paid by the producers. The processors' margin is the highest at 5.44 per cent of the consumer's price. In channel II (producers processed channel) the marketing charges paid by the producers are the highest, being 11.76 per cent of the consumer's price. The retailer's margin is the highest at 1.91 per cent of the consumer's price. The producer's share in the consumer's price in channel I and channel II is 65.79 per cent and 73.57 per cent respectively. The middlemen's margin is the highest in channel I, being 8.20 per cent it is the lowest in the channel II (2.93 per cent). From the study it is concluded that the producer's share in consumer's rupee is higher in channel II and the consumer's price is also lower in channel II than in channel I. Hence channel II is considered better. The share of the producer in the consumer's rupee can be increased by restricting the number of intermediaries and unauthorised deductions should be made illegal. The assembling and processing of sugarcane on co-operative basis will be more remunerative and economical to the producers.

IMPACT OF INPUT-OUTPUT PRICES AND YIELD ON RESOURCE DIVERSION – A CASE STUDY OF MANIPUR

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The objective of this paper is to examine if there is any diversion of resources from the agricultural sector to other sectors and also to see what is (are) the determinant(s) of increas-

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ing use of fertilizer which would help in understanding future resource diversion in detail. In this study resource refers to fertilizer which is the most important variable cost of agricultural production in the economy of Manipur. The crop under study is rice which is a monocrop of the State and the study covers the period 1971-72 to 1982-83 when consumption of chemical fertilizer and the area under HYVs of rice crop increased steadily. The broad conclusion emerging from this paper is that increasing use of chemical fertilizer is not related to the price differential of fertilizer and of rice crop and no resource diversion of the resources from the primay sector is indicated by a decline in the rate of use of fertilizer which might be attributed to a decline in the growth of yield of rice. The implication of this conclusion is that price incentive to Manipuri farmers might not be as effective as yield incentive. Increasing yield may be obtained by improved technology and proper education which would help in absorbing the technical know-how and using their knowledge in proper way.

PRICE STRUCTURE OF RAPESEED AND MUSTARD IN HARYANA

D.S. Nandal*

The economics of processing of rapeseed and mustard showed net returns of Rs. 11.05, Rs. 16.55 and Rs. 14.37 per quintal of oilseed when processed in 1984 by oil mill, expeller and *kohlu* repectively. The most common marketing channel for *rabi* oilseeds is producer-wholesaler-oil expeller-retailer-consumer. The comparison of price spread for rapeseed and mustard in Hisar market during 1974 and 1984 indicated no change in the relative share of the producer in the consumer's rupee. However, the relative margin of the retailer and wholesaler slightly improved in 1984 over 1974 while that of the oil expeller slightly declined. The uptrend in the arrival and prices of rapeseed and mustard witnessed an annual increase of 2,233 quintals per year for the last 18 years. During this period harvest prices increased by Rs. 23.48 annually. The acreage response function of Nerlovian model showed that the expected price (last year's price) played a significant role in acreage allocation while the coefficient of variation in prices of the oilseed reduced the acreage under oilseeds significantly, showing thereby the need for a long-term positive price policy for increasing the output of oilseeds.

The movement in relative prices of oilseeds showed that rapeseed and mustard was already a dearer commodity compared to the main crop wheat at the time of creation of Haryana in 1966 and rapeseed and mustard further improved its relative position with the passage of time. Support prices of rapeseed and mustard have always been lower than harvest prices. In the interest of farmers and national economy, the support price needs to be raised suitably and should be announced before the sowing of the crop. Seasonality in the indices of arrivals was more pronounced than that in the indices of prices but the correlation coefficient between the arrival and price indices was negative and not significant. The low seasonal price indices for oilseeds further confirmed that there was no price incentive to the farmers for withholding the stock and selling it in lean period. Although the price structure of rapeseed and mustard is not unfavourable to their growers, yet it will not be sufficient to wipe out the oilseeds shortages from the country unless there is a technological breakthrough in oilseed productivity.

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PRICE STRUCTURE OF AGRICULTURAL COMMODITIES: AN ANALYSIS OF A MILLET CROP IN INDIA

N.S. Viswanath†

The main objectives of the paper are *(i)* to study the intensity of growth rates of prices, *(ii)* to esitmate the share of farm prices in retail prices, and *(iii)* to esitimate the farm-wholesale, wholesale-retail and farm – retail price spreads of *ragi* – a major millet crop in India – mainly covering three States, Andhra Pradesh, Karnataka and Tamil Nadu. The period of study is from 1967 to 1981. The following are the salient findings emerging from the analysis of data: The farm harvest prices of *ragi* have registered low growth rates when compared with wholesale and retail prices in all the three States with Andhra Pradesh registering the least (5.06 per cent) followed by Karnataka (5.42 per cent) and Tamil Nadu (9.95 per cent). During the period 1967-71, a negative growth rate was registered at all the three levels in Karnataka. In respect of wholesale prices, Karnataka had the least growth rate (6.91 per cent), followed by Andhra Pradesh (7.90 per cent) and Tamil Nadu (16.76 per cent) with Karnataka experiencing the highest growth rate during 1977-81. In respect of retail prices, the growth rate was the least in Karnataka (6.54 per cent), followed by Andhra Pradesh (8.22 per cent) and Tamil Nadu (19.06 per cent). The farm harvest-wholesale price spread is characterized by inconsistent but increasing trend in all the three States with Karnataka the least and followed by Andhra Pradesh and Tamil Nadu. The wholesale-retail price spread is comparatively low although increasing as compared to farm-wholesale price spread, being the least in Karnataka. The farm-retail price spread is again inconsistent but showed in increasing trend over the years leading to a decline in the share of farm prices in the retail prices. Such a behaviour of prices at different levels is explained by the lack of infrastructure along with different types of demand functions at different levels. Further, the fact that no policy measures have been initiated in respect of prices indicates the need for it as this crop occupies a major portion of the area under it in the three southern States under study. It is suggested that infrastructure building at the wholesale level would prove useful for a streamlined price transmission mechanism leading to overall development of the agricultural sector.

FARM PRICE STRUCTURE : THE NEED FOR PARITY

T. Shankar and S. Varadarajan†

India's price policy has ever been an effort to solve the conflict between the producers' and consumers' interests. The need for reasonable parity between product and factor prices is studied in respect of Tamil Nadu. The analysis of index parity of prices indicated that the price received by the farmers had increased by about three times while the price paid by them increased by five times during 1968 to 1984 of this unfavourable terms of trade, the farmers continued to produce more, due to either the absence of alternative source of employment and income or the presence of production incentive, especially the technological breakthrough to improve productivity and to reduce unit cost of production. The correlation between wholesale and retail prices of food crops was 0.9975, indicating perfect rela-

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tionship between them. For non-food crops also, the same trend was observed and the correlation coefficient was 0.9976. The results would imply perfect interaction between wholesale and retail markets for both food and non-food crops. The estimated indices of parity for wholesale and retail prices of food and non-food crops revealed that the year to year variations in the indices of parity for wholesale prices were similar to that in retail prices. The analysis also showed that the non-food crops were relatively more remunerative than food crops. The results of this study have also shown that the farmers would gain more from stability in farm prices than from rise in prices, and cultivation of non-food crops was advantageous.

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