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# PRICE POLICY FOR AGRICULTURAL DEVELOPMENT

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The results of studies of input-output relationships recently conducted in India by the Directorate of Economics and Statistics, Union Ministry of Food and Agriculture, show that farmers' dependence on market is increasing. The market mechanism needs to be so orientated that the terms of trade do not hit the farmer adversely. A well defined price policy is, therefore, needed that would provide a stimulus to farm production so that the agricultural targets of the Plan could be fulfilled. Such a price policy should ensure movements of relative prices that would be consistent with the priorities and targets of the Plan. The main objectives of this integrated price policy are :

(*i*) to stabilize the general price level,

(*ii*) to maintain appropriate relationship between the prices of competing crops within agriculture and between farm and non-farm products,

(*iii*) to reduce seasonal fluctuations in agricultural prices to the minimum, and

(*iv*) to maintain a regular flow of marketable surplus and to stimulate exports of farm products.

*Stabilization of General Price Level*

The main objective in stabilizing the prices is to effect a mitigation in serious price fluctuations and in inflationary rise in prices in particular. It is difficult to distinguish between functional rise and inflationary rise in prices in a growing economy. But, a disproportionate rise in prices compared with the rise in the rate of interest should serve as an indicator for tightening the fiscal, monetary and physical controls, if need be. In fact, inflation in under-developed countries is the bottleneck inflation, the disequilibrium arising from specific shortages. A more effective approach to solving the inflation problem, therefore, seems to be to step up agricultural production and develop markets in those areas with a view to eliminating localized pockets of high prices.

*Maintaining Appropriate Relationship Between Different Prices*

Parity formula is one workable method used by U.S.A. and some other countries to establish proper inter-relationship within the agricultural sector and between farm and non-farm products. Since under-developed secondary and tertiary sectors of Indian economy can hardly finance price support operations for about 80 per cent of the population on land, price support seems to be

prohibitive in cost. This may be the reason why the Planning Commission have not laid down any specific price support programme for the agricultural sector, although they are deeply concerned about a suitable price policy.

Forward pricing system has been tried in U.K. to achieve the same objective. The system based on prospective conditions of demand and supply will be also in line with the global prices, so as to stimulate exports of farm products. The real difficulty lies in making correct estimates of prospective conditions of demand and supply. The forecasting method must have an unusually high degree of accuracy, if forecasts are to be used as a basis for decisions to inaugurate changes in stabilization measures. Because of limited funds available and importance in such countries of avoiding high consumer prices in view of average low level incomes, price support measures in under-developed countries should be largely of a self-financing nature.

If funds are the most limiting factor in operating price support policy through parity formula or forward pricing system, emphasis might be laid on building up buffer stocks to stabilize prices and to mitigate seasonal fluctuations in prices. "The key to stabilization is building up of buffer stocks and operating on them through continuous purchase and sale over a wide front."[1] The buffer stocks built with P.L.480 imports would make it easier to stabilize the prices of foodgrains. Bulk of the supply of 16 million tons of wheat and 1 million tons of rice will be available for use primarily in the Third Five-Year Plan period. Reserve stocks of grain could serve not only as an insurance against crop failures, but could also bring down very substantially the annual seasonal variations in prices.

*Reducing Seasonal Variations in Prices*

Due to low staying power of the average Indian farmer, there is post-harvest glut and prices rule low in the market. Seasonal fluctuations[2] in arrivals and prices of wheat in *Moga* market were studied for ten years (January, 1951 to December, 1960). They showed a high degree of negative correlation ($r = -0.852$) and the regression equation gave the following results:[3]

$$Y = 1.1458 - 0.1219\,X$$
$$(0.0236)$$

where Y represents seasonal fluctuations in prices, and
X represents seasonal variations in arrivals.

It means that every change of one thousand *maunds* of arrivals there is a corresponding inverse change of Rs. $0.1219 \pm 0.0236$ per *maund* in the price of wheat.

To reduce the seasonal fluctuations in agricultural prices to a minimum, orderly marketing seems to be an absolute necessity. This will serve, at least in part, the same purpose which price support policy sets out to do. Whereas

1. Government of India, Third Five-Year Plan, p 130.
2. Seasonal fluctuations are monthwise averages of fluctuations of monthly prices and arrivals, from their twelve monthly moving average trend over ten years (See Appendix I).
3. Figures in parenthesis are Standard Errors of Regression Coefficient.

limited funds make it difficult for the Government to commit themselves to price support policy, they could help reduce the seasonal fluctuations by promoting orderly marketing. The Government could enter into the open market operations in the post-harvest period, build up reserve stocks and feed it into the market in the lean season, thus reducing seasonal price fluctuations in the market prices.

Irregular price fluctuations[4] in the producer market (*Moga*) and in the importing market (Amritsar) in the Punjab were studied for ten years. They showed a high degree of positive correlation ($r = 0.8326$). Regression equation gave the following results :

$$Y = 0.0911 + \underset{(0.0537)}{0.8326\,X}$$

where Y indicates *Moga* prices and X Amritsar prices.

It means that with every change of Re. 1.00 in wheat prices at Amritsar, there is a corresponding direct change of Rs. $0.8326 \pm 0.0537$ per *maund* in *Moga* market. The results show that the working of the export and consuming markets should be closely co-ordinated with a view to eliminating localized pockets of high or low prices. This will help in stabilizing the prices, which is one of the main objectives of the price policy for agricultural development.

Price increase originates in the market where market demand is strong. A regression equation was fitted with irregular prices in export market (*Moga*) as a function of irregular price fluctuations in Amritsar market and irregular arrivals in *Moga* market. The following results are obtained:[5]

$$Y = -0.0461 + \underset{(0.0538)}{0.8338\,X_1} + \underset{(0.000002)}{0.00000031\,X_2}$$

where Y represents irregular price fluctuations in *Moga* market,
$X_1$ represents irregular price fluctuations in Amritsar market, and
$X_2$ represents irregular wheat arrivals in *Moga* market.

$X_1$ (irregular price fluctuations in Amritsar market) was highly significant, but $X_2$ (irregular arrivals in *Moga* market) was not significantly different from zero. The results show that price increase originates in consuming markets. If heavy consuming markets could be fed with buffer stocks, built with P.L.480 funds and with open market operations in post-harvest period, strong demand in heavy consuming market will not spread to other markets and danger of inflation could be averted. These measures supported by an orientated marketing structure will result in sustained agricultural development and help the economy to take off.

*Maintaining Regular Flow of Marketable Surplus and Exports*

Mitigation of seasonal fluctuations in prices should encourage regular flow of marketable surplus. Co-operative marketing societies need to function on business-like principles and advance adequate cheap institutional credit to tide

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4. Irregular fluctuations for any month are equal to total monthly fluctuations from the trend, minus seasonal fluctuations. Appendix II shows irregular price fluctuations in *Moga* and Amritsar markets.

5. Figures in parentheses show Standard Errors of partial regression coefficients.

over the immediate post-harvest needs of the farmer for meeting contractual obligations. Institutional credit will increase the staying power of the farmer and help him to effect more orderly sale of his produce.

Depending upon elasticity of demand and price structure in the foreign market, the domestic market could be insulated, thereby bringing the export prices more in line with the global prices. This will help the nation to compete in the international market for farm exports and achieve the farm export targets of the Plan.

*Conclusions*

Less developed economies depend for as much as 50 per cent or more of the national income on agriculture. Price support programmes operated through parity formula or forward pricing system could not be implemented because of limited funds available with the Government for the purpose. Efforts could, therefore, be concentrated on bringing about orderly marketing, with a view to eliminating seasonal fluctuations in prices. The domestic market could be insulated and export prices brought in line with the world market to stimulate exports of farm products and fulfil the targets of the Plan.

## APPENDIX I

SEASONAL FLUCTUATIONS IN ARRIVALS AND PRICES OF WHEAT AT MOGA (FROM JANUARY, 1951 TO DECEMBER, 1960)

| Month | Seasonal Price Variations (Rs.) | Seasonal Variations in Arrivals (*Maunds*) |
|---|---|---|
| January | 0.98 | —35381 |
| February | 1.14 | —36138 |
| March | 0.97 | —36669 |
| April | 0.46 | —38401 |
| May | —1.26 | 71885 |
| June | —1.40 | 182000 |
| July | —0.76 | 28783 |
| August | —0.16 | —6383 |
| September | —0.01 | —23750 |
| October | 0.17 | —29985 |
| November | 0.38 | —34418 |
| December | 0.63 | —31595 |

Fluctuations were worked out from monthly prices and arrivals data obtained from the Marketing Office, Punjab, Patiala by applying time-series analysis.

## APPENDIX II

### MONTHLY IRREGULAR PRICE FLUCTUATIONS AT MOGA AND AMRITSAR MARKETS (FROM JULY, 1951 TO JUNE, 1960)

| Year & Month | Price Variations | | Year & Month | Price Variations | | Year & Month | Price Variations | | Year & Month | Price Variations | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Moga* | Amritsar | | *Moga* | Amritsar | | *Moga* | Amritsar | | *Moga* | Amritsar |
| 1951 July | 0.05 | 0.33 | 1953 October | 0.52 | 0.13 | 1956 January | —0.24 | —0.34 | 1958 April | —0.44 | —0.51 |
| August | 0.21 | 0.67 | November | —0.12 | —0.40 | February | 0.07 | 0.24 | May | —0.27 | —0.61 |
| September | 0.23 | 0.47 | December | —0.13 | —0.07 | March | 0.60 | 0.97 | June | 0.60 | 0.17 |
| October | 0.15 | 0.40 | 1954 January | 0.31 | 0.20 | April | —0.36 | 0.87 | July | 0.22 | —0.29 |
| November | 0.11 | 0.25 | February | 0.61 | 0.83 | May | 0.12 | 0.09 | August | —0.58 | —0.33 |
| December | 0.02 | —0.03 | March | 1.05 | 1.41 | June | 0.47 | 0.68 | September | —0.58 | —0.86 |
| 1952 January | —0.42 | —0.65 | April | 0.79 | 1.30 | July | 0.52 | 0.49 | October | —1.06 | —0.90 |
| February | —1.05 | —0.88 | May | —0.37 | 0.24 | August | 0.49 | 0.35 | November | —0.60 | —0.94 |
| March | —1.03 | —0.68 | June | —1.31 | —1.54 | September | —0.23 | —0.22 | December | 0.20 | 0.04 |
| April | —0.50 | —0.50 | July | —1.33 | —1.38 | October | —0.23 | 0.11 | 1959 January | 2.26 | 2.61 |
| May | 0.35 | 0.73 | August | —0.79 | —1.29 | November | 0.15 | 0.21 | February | 3.23 | 3.13 |
| June | 0.30 | 0.49 | September | 0.58 | 0.43 | December | 0.46 | 0.21 | March | 3.66 | 3.29 |
| July | 0.15 | 0.82 | October | 0.83 | 0.67 | 1957 January | —0.10 | —0.49 | April | 1.21 | 1.09 |
| August | 0.10 | 0.59 | November | 0.82 | 0.48 | February | 0.31 | —0.08 | May | —0.87 | —0.73 |
| September | 0.15 | 0.45 | December | 0.56 | —0.02 | March | —0.11 | —0.41 | June | —1.44 | —1.42 |
| October | 0.32 | 0.42 | 1955 January | 0.31 | 0.55 | April | 0.90 | 0.20 | July | —0.85 | —0.77 |
| November | 0.08 | 0.12 | February | —0.17 | 0.25 | May | 0.19 | 0.45 | August | —1.02 | —1.36 |
| December | —0.35 | —0.30 | March | —1.23 | 0.01 | June | 0.53 | 0.49 | September | —0.55 | —0.50 |
| 1953 January | —1.21 | —1.26 | April | —0.74 | —0.48 | July | 0.31 | 0.08 | October | —0.12 | 0.17 |
| February | —1.61 | —1.68 | May | —0.64 | —0.79 | August | 0.68 | 0.24 | November | —0.14 | 0.31 |
| March | —1.62 | —1.81 | June | —0.22 | —0.39 | September | —0.26 | —0.48 | December | —0.10 | 0.10 |
| April | —0.43 | —0.16 | July | 0.23 | —0.07 | October | —0.24 | —0.25 | 1960 January | —0.16 | —0.13 |
| May | 1.00 | 0.93 | August | —0.08 | —0.07 | November | 0.17 | —0.04 | February | —0.25 | —1.02 |
| June | 0.44 | 0.37 | September | —0.25 | —0.51 | December | —0.70 | —0.25 | March | —0.28 | —1.42 |
| July | 0.80 | 0.75 | October | —0.17 | —0.71 | 1958 January | —0.79 | —0.51 | April | —0.37 | —1.84 |
| August | 1.03 | 1.20 | November | —0.43 | 0.00 | February | —1.17 | —0.80 | May | 0.48 | —0.24 |
| September | 0.94 | 1.20 | December | 0.05 | 0.28 | March | —1.02 | —1.39 | June | 0.67 | 1.17 |

Irregular price fluctuations were worked out from monthly prices obtained from Marketing Office, Punjab, Patiala by applying time-series analysis.