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*Considerations Related to Optimum Pricing and Marketing
Strategies in Rural Development*

1. INTRODUCTION

Pricing policies towards food crops in most developing countries have been aimed at keeping the price of food low to the urban sector. Given that supply of domestic food production has generally not kept pace with the growing demand, this has meant a policy of price and supply controls, leading to considerable inefficiencies. The inefficiencies arise from malallocation of government's fiscal and administrative resources to implementation of price controls, albeit ineffectively; from adverse effect of the price controls on growth of food production by increasing risk and uncertainty and reducing return to investment in food production; and finally, from bypassing the very considerable potential of the traditional marketing systems to carry out the pricing and marketing function, and through a misplaced emphasis on the role of the public sector. The equity effect of the policy is usually also questionable.

In this paper, therefore, the considerations that should enter formulation of a more desirable agricultural pricing and marketing policy are discussed. A case is made for a price and supply stabilization program involving fixation of guaranteed minimum and maximum prices and buffer stocks — as a way of reconciling the objectives of agricultural growth and urban political stability. The factors that should enter fixation of minimum and maximum prices are discussed. It is argued that the direct role of the public sector should be confined to implementation of the price stabilization program, including purchases to support prices at the minimum and sales to counter price increases over the prescribed maximum, and that the remaining marketing function should be left to the private and the cooperative sector, with the latter growing only gradually to ensure its long-term success. The very substantial role that the government must, however, play in improving the efficiency and equity in pricing through investment in physical infrastructure, market intelligence and regulation is outlined.

* The views expressed in this paper are those of the author and do not necessarily represent the views of the World Bank. I am grateful to Mr. Jayanta Roy for his comments on an earlier draft of this paper.

There are three reasons why the discussion is mainly focussed on agricultural crops produced for domestic consumption and refers to situations of excess demand. First, in the past food deficits were most often the feature of densely populated Asian countries. However, they have become increasingly common in a substantial number of African and Latin American countries as the domestic food production has failed to keep pace with the demand generated by rapidly growing population and urbanization. Second, much experience has accumulated with regard to conceptualization and implementation of pricing and marketing policies in developing countries from which useful lessons now can be drawn to tackle problems, particularly involving growth of the low income food crop producing sector. Finally, pricing and marketing of food crops pose the most difficult conflicts among economic, sociopolitical and administrative considerations and, therefore, pose the most challenge in their resolution. Despite its focus on food crops, and excess demand, many of the observations made in this paper, however, also apply to traditional export crops and to marketing in situations of excess supply.

2. OBJECTIVES OF PRICING AND MARKETING POLICIES

2.1. *Reducing marketing margins*

Markets are expected to perform the function of signalling prices to consumers and producers thus bringing about an efficient allocation of available supplies among consumers and of resources by producers. Such price signalling is normally accomplished within the existing distribution of income. Through its effect on effective demand income distribution, of course, has a profound impact on allocation of supplies among consumers and of resources by producers. An efficient allocation is, therefore, not necessarily equitable.

Ignoring for the moment these important equity considerations discussed later in the paper, the popular view in low income countries has been that the traditional markets for agricultural commodities do not perform the function of price signalling effectively, and that there are substantial differences between prices paid by consumers and those received by producers, both over time and space, that are caused by monopolistic and profiteering elements in private trade.

Introduction of alternative marketing channels in the public and/or the cooperative sector is, therefore, often considered necessary on the ground of reducing market margins so as to improve the prices to the farmer and/or to reduce the price of food paid by the consumer. Improving competition through different channels of marketing can potentially have a significant impact on pricing efficiency. However, the alternatives of government or cooperative marketing have not been very successful, particularly in food grain marketing, despite considerable government support. As will be documented later this is because the available evidence frequently does not support the popular view about private trade; nor does it provide the basis for the belief that the inefficiencies that do arise in traditional markets are merely the result of monopolistic elements. It indicates that inadequate development of physical infrastructure, poor dissemination of market

information, insufficient regulation of marketing practices and uncertainties arising from basic imbalances in demand and supply result in inefficiencies. Through pricing and marketing policies of the type discussed in this paper, governments can play a very important role in each of these areas to reduce marketing margins. However, the route of a takeover or discouragement of private trade that is often followed in LDCs is neither necessary nor desirable to fulfil the objective of reducing market margins.

2.2. Reducing price and supply instability

Even if the traditional markets are reasonably efficient, they may be unable to cope with, and may even exacerbate, the year-to-year instability and uncertainty in the marketed supplies and prices that often result from fluctuations in production. These pose a particular problem for the governments especially when there is only a marginal balance between supply and demand. In such a situation, the marketing and pricing policies, of course, have to serve different and often conflicting functions in the urban-industrial and the rural-agricultural sector, as pointed out below.

2.3. Ensuring low cost supply of food to the urban sector

The relative income effect of a given price change in the essential food items is greater on lower than on upper income groups.¹ Their precise magnitudes and hence the need for an assured low cost food supply at various income levels, however, remain unknown because of the generally poor empirical knowledge about demand schedules for food in widely diverse conditions of income levels, scope for substitution, and consumer preferences that exist in different countries, and often, within a large country, among regions.²

Despite the disputed need on economic grounds, governments often feel obliged to ensure low cost food supply to all sections of the urban population albeit on different grounds. In a situation of income inequality that prevails in most cities of developing countries, left to themselves, low income urban classes are often even unable to acquire the necessary minimum supply of food for domestic consumption in years of supply shortages and high prices. Ensuring supplies to this class, therefore, seems essential to governments on welfare grounds.

Because agricultural commodities and, in particular, food crops constitute an important item in the consumption expenditure of industrial wage earners, supply shortages and high prices almost always lead to demand for increased wages, providing justification for increased substitution of capital for labor in industrial production over time.³ Because of the likely adverse effect of high wages on the pace and pattern of industrial growth and, therefore, on the growth of industrial employment, governments are often under pressure to ensure low cost supplies of agricultural commodities to the low-middle income industrial laboring class.⁴ This pressure is, of course, greater in countries that have a significant industrial labor force, as in India, than in less industrialized African countries, such as Tanzania, Ethiopia or Malawi.

Relative to the wage earners, the middle and high income classes, including the civil servants, spend a lesser share of their budget on agricultural items.

Nevertheless, given their administrative influence, this class often plays a substantial role in ensuring low cost food supplies for the urban sector as a whole.

An even more important reason for the policy of price controls, of course, is that the high concentration of population in urban centers makes political unrest much more imminent there than in the rural areas, reinforcing the inclination of most governments to maintain prices and ensure overall supplies to cities. Also, targeting food distribution towards specific low income groups is administratively highly demanding, as the information of the size of the population falling in various income classes is rarely adequate. There are also numerous practical difficulties, including the political pressure to broaden the program, where the target group cannot be easily delineated, particularly as the socioeconomic classes are not obviously and highly stratified in most cities. In situations of overall shortages, the scope for evasion of the restricted distribution program is, therefore, considerable. Thus, for a combination of social, economic, political and administrative reasons, a substantial commitment of the government's budgetary and administrative resources is frequently made in many countries to controlling the level of prices and for ensuring food supplies to the urban population.

This commitment may take three forms. In many cases, governments fix prices ranging from the farm gate to the consumer. These controls are often combined with restrictions on the sale of surplus to private agencies and movement of grain among administrative boundaries on private account. Purchases and interregional transfers of grain are made on government account at statutorily controlled prices.⁵

Paradoxically, such restrictions are justified largely because governments do not aim at evening out prices and supplies among years by purchases in good crop years and sales in bad crop years. Despite legal fixation of prices, in absence of effective implementation of price controls, farm gate prices frequently drop precipitously even with a slight increase in production. Poor implementation results from lack of adequate administrative machinery to purchase the quantities necessary to support prices. Frequently governments also lack the inclination to support prices. In situations of surpluses, left to themselves, the traditional markets are often unable to dispose of the market arrivals without a major price drop because of the poor transport, storage and market intelligence facilities with which they operate. The situation is usually worsened by (i) movement restrictions and (ii) by the fact that the effective demand rarely extends beyond the large urban centers even if there is food deficit and even if supplies can flow easily to the deficit areas as rural income levels are usually very low in such areas.

The experience is the opposite in bad crop years. The controlled prices at which government purchases are attempted often tend to serve as the floor rather than as the ceiling price. Consequently, governments are unable to acquire control of a sufficiently large share of the marketed surplus early in the season to influence domestic prices and urban supplies. When forced withdrawal of a share of the total surplus is attempted in the public sector through monopoly procurement, there is a great deal of evasion. Market prices of the produce passing through the non-governmental channels increase even more

than they would in the absence of such withdrawals. The effective weighted average price of the controlled and uncontrolled marketed surpluses is thus not necessarily lower with government intervention than without.⁶

Imports are the other major instrument used by governments to stabilize domestic prices and supplies. Such a policy may be justified when low cost concessionary imports are available at a short notice and/or the balance of payments situation is favorable. In such a situation, the real cost of imports to the government may frequently be significantly lower than that of carrying stocks from one year to another. In some cases, concessionary imports have even been a major source of revenue for governments.⁷ Reliance on imports for supplies is also administratively less demanding than acquiring control of the domestic production.

However, the uncertainties of timing of imports have often led to disruption of the domestic market, exacerbating rather than reducing speculation, increasing market inefficiency and through increasing risk adversely affecting the domestic incentive to increase production for the market.⁸ In absence both of good market intelligence on domestic production and a well-conceived pricing and marketing policy, some countries have even followed trade policies contrary to those required by the domestic situation, importing grain when domestic surpluses existed and exporting in times of deficits.⁹ The changing world food situation has, of course, changed the economics of imports vis-a-vis that of the domestic buffer stocks, and once again stressed the need for domestic self sufficiency.

Influencing prices through retail distribution has been the third major policy instrument used by governments. In countries such as India, Bangladesh and Pakistan, although governments have carried out "fair price distribution" on a massive scale, it has been confined largely to urban centers. Low income rural populations have benefited only in situations of extreme shortages verging on famines. This is despite the fact that market dependence of low income rural households has been increasing in recent years.¹⁰ Even the urban distribution has been more significant in years of shortages than of surpluses.¹¹ In China and to some extent Sri Lanka, on the other hand, the governments have undertaken to assure supply of basic food items at a fixed price both to the urban and the rural population at all times. In Africa, governments have played a relatively minor role in retail distribution mainly because of their limited manpower to administer such programs.¹² Even wholesale distribution to deficit regions has been avoided by many marketing boards as being too costly and administratively infeasible, as for instance in Malawi.

Contrary to the usual contention, government intervention in trade has been usually destabilizing rather than stabilizing. In the short run, controlling prices at levels below the market prices often results in withholding of marketed surpluses by farmers and thus makes the flow of marketings unpredictable.¹³ The capacity of farmers, particularly of those who contribute most to the marketed surpluses, to withhold has increased considerably in recent years with increases in their incomes.¹⁴ In the long run price controls affect incentives to produce for the market in various ways as will be illustrated later in this paper. Low food prices often also lead to clandestine flight of surpluses

across borders to deficit regions and countries. In the latter case this means loss both of marketed surpluses and of government revenues.

Also, contrary to the popular view, the marketing margins incurred by government and parastatal agencies are almost invariably higher than those incurred by traditional traders.¹⁵ This is because of their high overhead costs and poor management. The latter results in greater handling and storage losses and is frequently associated with corrupt practices.¹⁶ Government agencies usually also have a poor record in timeliness of services in purchasing from the producer and selling to the consumer. In addition, the illicit trade caused by government regulations in the private sector frequently increases the chain of intermediaries, reduces the scope for bulk marketing and thus increases costs of marketing.¹⁷

Controlled prices are also less equitable than they appear on the surface. Where attempts are made to procure market surpluses in situations of supply shortages through a compulsory levy at controlled prices, as in India, the large commercial farmers are greater evaders of the procurement system than the politically less powerful small farmers. The lower effective weighted average price earned by small farmers through more regular sale of their marketed surplus to the government seems particularly paradoxical as the surpluses are usually distributed to the relatively high income urban consumers. Apart from adverse equity effects in the short run, price controls also result in inequitable incentives to increase production among large and small farmers in the long run. Because the size of the marketed surplus controlled by the government usually varies from year to year, the effective weighted average price received by farmers is also unpredictable leading to considerable uncertainty as to the return to production. The ramifications both of uneconomic and unstable agricultural prices to agricultural growth among small and large farmers are discussed later in this paper.

Given the shortcomings of the policy of controlled prices, there is need for a different pricing and marketing policy which encourages growth of the domestic food supply through assuring minimum prices for the major food crops, that allows greater scope for the market forces to work so as to minimize the drain on the government's budgetary and administrative resources, but that nevertheless allows the government to play an important role in stabilizing prices to meet its political and developmental objectives.

2.4. Assuring a minimum return to resource use

The size of production of any particular crop depends on its profitability. Even if new technologies assure a much higher physical response of output to inputs than realized before and, therefore, reduce costs per unit of production, if the input and output prices do not assure a certain return, farmers are unlikely to be interested in increasing production. To the extent that technological change results in a substantial shift in physical response, little or no increase in existing input/output prices may be necessary to provide incentive, particularly if existing producer prices fully reflect domestic demand. However, for the reasons discussed earlier, the greater the increase in production from such technical change, usually the greater the possibility of a substantial

decline in prices. A pricing policy that assures a minimum return to the producer is, therefore, necessary even if a substantial increase in the ratio of output to input prices from the previous level may not be called for.¹⁸

(a) *Ensuring a balance among crops.* Whether or not new technologies exist, through reallocation of existing resources among crops, the relative profitability of different crops influences the composition of agricultural production. The evidence with regard to yield responsiveness to changes in relative prices is poor. This is partly because of inadequate research in this area, but also because in addition to the level of inputs – yields are determined by climatic factors and management practices, the contributions of which pose difficult problems of estimation. Much more research, therefore, is needed in this area. Considerable evidence, however, exists to indicate a significant response of acreage to changing relative prices.¹⁹ Evidence also exists with regard to response of labor allocation to return among crops.²⁰ Relative price changes can, therefore, be an important means of allocating inputs and thus of ensuring the necessary balance in supply between food and export crops or among food crops between cereals and pulses, and between crops and livestock.

Increase in the acreage and labor allocated to export crops in the last three decades in the smallholder sector in many African countries is, among other things, a result of the relatively higher prices that such crops have enjoyed in comparison with the controlled prices of food crops, leading to both substitution away from food crop production as well as bringing of additional labor and land into production.²¹ Farm gate prices are frequently attractive despite the high costs of marketing incurred by marketing boards and cooperatives that usually handle export crops and despite their having been a major source of fiscal revenue for governments. In contrast to food crops, export crops have usually also enjoyed an assured channel of marketing at the farm gate through greater investment in marketing facilities and lesser control over their movements. The relative differences in pricing and marketing have resulted in (i) disparities in incomes between producers of food crops and export crops, (ii) slow rate of growth of marketed surpluses of food crops, (iii) growing dependence on imports to meet the rapidly increasing urban demand and (iv) growing income disparities between the subsistence agricultural sector and the urban industrial sector. In establishing relative pricing of crops, the following specific objectives, therefore, need to be considered if long-term overall development is the objective: (i) realizing domestic self sufficiency in food, (ii) maintaining or expanding agricultural export earnings and (iii) striving for more equitable benefits of growth in the agricultural-rural and the urban-industrial sector.

(b) *Increasing aggregate agricultural production.* Whether the objectives of increasing production of individual crops and of increasing overall agricultural production are mutually consistent or conflicting will depend on the extent to which the overall supply of agricultural commodities responds to relative changes in prices between the farm and the non-farm sector. Empirical evidence on aggregate supply response to price changes among sectors is very

limited.²² However, a number of observations can be made on *a priori* grounds. The aggregate supply response will depend on the extent to which additional resources can be brought into agriculture in response to changes in relative prices among sectors without substantially increasing costs of production. The possibilities for additional resource mobilization, of course, vary considerably among countries depending on the scope for exploitation of additional resources.²³ Where a single crop already occupies a very major share of the cultivable land and much of the cultivated land is already being farmed, as is the case with rice in many Asian countries, the elasticity of input use with respect to change in relative prices can, of course, not be very significant. In such cases, production increase must come about largely through use of increased modern inputs made profitable by technological change. Relative prices can facilitate the use of modern inputs necessary in the new technology. In contrast, where a variety of crops are grown, each constituting a small share of the total agricultural production, the elasticity of input use with respect to price changes among sectors is likely to be greater than in a monoculture situation and even more so where scope exists for additional resource exploitation.²⁴ These conditions exist in several African countries. In such a situation, agricultural prices both relative to each other and relative to the non-farm sector may bring about a significant increase in overall production. Increase in overall production arising from increase in the quantities produced of major individual crops, therefore, needs to be distinguished from the increase in the *value* of total production through substitution of high value crops for low value crops. As pointed out earlier, much of the increase in production in African countries has come about in this latter way.

How minimum and maximum prices are determined within which government may buy and sell, will depend on how comprehensive the government aims are in its policy along the lines described above, and equally important, how much weight is attached to minimizing use of government resources and to the ease of implementation in the choice of a pricing and marketing strategy.

3. ESTABLISHING MINIMUM PRICES

Minimum prices should be set for only a few crops that are important in terms of consumption and as substitutes in production. Setting prices for a large number of crops is neither necessary nor desirable. It is administratively demanding, and also defeats the purpose of incentive effect of individual guarantees.²⁵

For the reasons outlined below, minimum producer prices may be determined on the basis of a combination — rather than being based on only one — of the following criteria: (i) average total cost of production, (ii) paid out costs of production, (iii) parity with the non-farm and/or international prices.

Average total cost of production in a normal year is the most logical basis for formulation of floor pricing if a certain net positive return to agricultural production is to be ensured. Use of average total cost criterion, however, poses a number of problems. These may be classified into three categories:

conceptual, empirical and budgetary. Only some of the more important questions from each of these categories are raised here to illustrate the nature of the considerations that must enter establishment of minimum prices.²⁶

Estimating what the real opportunity cost of inputs is to the farmer is often a problem as a number of inputs used in production frequently do not enter the market economy. Domestic labor provides a good example as it is usually the most important element of costs. Its pricing raises questions as to whether to value labor at the opportunity cost in alternate uses within the agricultural sector or whether to use the opportunity cost in non-farm employment, particularly in cases where prospects exist for migration to obtain urban employment. In arriving at costs, if wages are not valued even at other alternative productive pursuits in agriculture, through reducing return to labor, this may divert labor away from production into leisure or other agricultural and nonagricultural employment.²⁷ In countries where seasonal labor bottlenecks pose a major problem, as in many African countries, inadequate valuation of domestic labor in determining producer prices, albeit implicitly, has often had a substantial adverse influence on the flow of labor, particularly into food crops, as pointed out earlier. On the other hand, establishing statutory minimum wages of hired labor too high by governments has often increased cost of hired labor particularly for the small farmers to whom the alternative of increasing output through mechanization is not open. Valuation of labor at alternate employment opportunities may, however, also raise the floor price to a level which many governments may be unable to support with their scarce budgetary resources. The shadow wage rate and a minimum agricultural wage rate may, therefore, be viewed as the lower and upper bounds in costing labor to establish minimum prices.²⁸

The price of labor is also highly variable among regions and seasons depending on the degree of the labor constraint, posing a problem as to which levels of costs should be adopted as a guide to policy. The regional variability in costs has important implications for promoting interregional specialization or regional self sufficiency through the pricing policy. Choosing a high enough level of costs would promote production even in the least suited regions; a low level of costs on the other hand would discourage production for the market in regions with high costs of production. In arriving at prices, it is important to take into account not only the costs of transportation from low cost to high cost regions — which may be quite high where transport is poorly developed — but also whether the market structure, either traditional or organized, is likely to have the capacity to distribute in rural areas. Low prices may promote regional specialization before infrastructural and market development justifies this course, with substantial adverse implications for equity among regions, particularly when poorer regions do not have incomes high enough to attract surpluses by bidding prices high in competition with the cities.²⁹

Valuation of the land input also poses problems particularly where a land market does not exist and/or the rental charge either does not exist or is an imperfect index of the opportunity cost. In this case, opportunity cost of land in its alternate uses is the logical basis for evaluating the land input.

Costs of production also vary considerably depending on the technology used. Setting prices low on the basis of new technology will discriminate against farmers using more high cost traditional technology with adverse equity effects, particularly if new inputs are highly subsidized and/or if the bulk of the farmers do not have access to that technology. Once food production has reached the level of domestic self sufficiency, prices may however have to be lowered to discourage further increase in food production and to diversify the composition of domestic production. A careful analysis of costs is, therefore, necessary by farm sizes, types of technology and regions on a regular basis to determine the level of floor prices.

Parity with industrial prices is an additional index of pricing which may be considered the basis for determining floor prices. To some extent the cost of production approach already takes these prices into account to the extent that industrial goods and services constitute a direct input into production. However, prices of goods and services utilized in consumption may also affect incentives in agriculture through their effect on the cost of living in the rural sector, hence on real rural incomes and on the desire of the rural labor force to be employed in the rural or the urban sector. Once again setting parity with urban incomes or industrial wages may significantly raise the level of prices. Many governments may prefer not to – or may not afford to – go so far in transferring resources to the agricultural sector.

As mentioned earlier, direct taxes on rural incomes or land and indirect taxes on goods consumed or used in production in agriculture reduce net rural income. Subsidies, on the other hand, increase incomes. Taxes and subsidies, therefore, affect the incentives to increase agricultural production, and need to be taken into account in establishing minimum prices.

If input subsidies exist, minimum prices may not have to be established at as high a level as otherwise to assure a certain minimum return. Nevertheless, for the reasons discussed above, if the net profit is lower than in growing other crops there may still be substitution in favor of those crops. Input subsidies are, therefore, not an adequate instrument for increasing input use in a particular crop. The relative demands on budgetary resources of input subsidies and support prices also need to be examined in establishing minimum prices. A general input subsidy may involve greater commitment of government resources than would price support.

Governments frequently do not have the necessary professional manpower to develop so comprehensive a criterion of average cost of production and to carry out collection of reliable data and analysis on a regular basis to formulate and review prices on this basis. Such capacity can, however, be developed over time, as examples of India and Pakistan illustrate.

In the interim period, to simplify planning and implementation, governments may adopt a less complete and fiscally less demanding approach of using paid out costs as the basis for setting prices. To simplify the approach even further, they may only set prices of fertilizer, as it usually constitutes the most important cash cost, along with floor prices of selected crops. Variations in the fertilizer output coefficients among regions, size and type of

farms must, nevertheless, be considered in determining fertilizer/output price ratios. As such an approach does not take into account all paid out costs and understates the total costs of production even more, an adjustment in the fertilizer/crop price ratio may be made to allow for these other costs.

Import parity criteria is often favored over the cost of production approach for formulating prices. This is because, if pursued regardless of world prices, the cost of production criterion may distort domestic production by valuing various alternative inputs and outputs either more or less than they would cost (or could be sold for) in the world market. This has further consequence of reducing a country's foreign exchange earnings, as farmers will use more inputs than they should for maximum net production if the inputs are underpriced in relation to the cost of acquiring them internationally and produce less output if the output is similarly underpriced. By the same token, they will use less quantity of inputs if inputs are overpriced and produce more output if output is overpriced.

There are a number of reasons, however, why import parity criterion should not be used as the sole basis for setting prices. First, the considerable fluctuations in world prices of fertilizer and food in the recent years emphasize that import parity is not more sacrosanct than are other criteria for allocating a country's domestic resources. Used by themselves, parity prices may lead to a much greater instability in the domestic prices and supplies than can be afforded by most countries. The fluctuations thus raise a question as to which international prices to use. Even an average of five years if not properly selected may lead to price levels so high as to involve a considerable subsidy, placing burden on the budgetary resources with various far reaching implications of the type discussed below. On the other hand, in times when international surplus exists, prices implicit in concessionary imports may frequently be far below domestic prices, implying considerable taxation of the domestic agricultural sector. In case of crops such as rice, where internationally traded amounts constitute a very small share of the world production, the extent to which international prices are a reasonable index of the supranational production function is also questionable.

The extent to which import parity is used as a criteria also has to be examined in terms of whether imports serve the function of stabilizing production fluctuations arising largely due to weather factors or whether they fill a gap created by chronic excess in demand. Even in the latter case, whether raising prices to parity level will lead to increase in domestic supply will depend on the aggregate supply response that, at least in some cases, may depend more on technology than on prices as pointed out earlier. Further, even if overall production is highly responsive to prices, there may not always be sufficient effective demand to absorb the surplus.³⁰ Therefore in general, rather than using a particular criterion by itself, the combination of considerations involved in the various criteria discussed above should be the basis of formulating floor prices depending on the relative importance of these factors in individual cases.

4. PRICE STABILIZATION

Apart from determining the level of minimum prices, the range within which governments may allow prices to fluctuate and thus the upper price bound needs to be determined. In this context, three interrelated considerations have to be taken into account: (a) costs of holding a buffer stock vis-a-vis other alternative uses of government resources, (b) effect of price stability on production incentives and hence on growth in the industrial and agricultural sector, and (c) the incidence of taxation and/or subsidy by sectors and classes.

A narrowly defined price range has costs similar to those already incurred by many governments by fixing prices below the market. To implement it effectively, it requires a substantial control of stocks. If imports are not available at a short notice, and at concessionary prices (as years of low production domestically may be associated with high international prices and high cost of imports), control of stocks may mean building buffer stocks, involving between 15 to 20 percent of the value of stocks in annual carrying costs. Depending on the size of the stock, this may mean a substantial commitment of the government's budgetary resources.³¹ Because most governments are unable to reduce their recurrent budgetary expenditures, the expenditure on buffer stock will usually be at the cost of resources that would otherwise be invested in the public sector. If the marginal propensity to save in the public and the private sector is the same, investment in buffer stocks and the consequent control of inflation may only transfer savings from the public to the urban private sector with no significant effect on growth (assuming that both would invest in the industrial sector). With buffer stocks, the rate of investment will be relatively steady as prices will not increase in short crop years to a level to reduce private savings and investment. Without buffer stocks, however, timing of the investment will vary considerably from year to year, assuming that instability has no adverse effect on industrial investment. It is, however, likely that price and wage instability may lead to considerable political unrest and/or disincentive to invest, with adverse effect on viability of governments and/or industrial growth. A narrowly defined price range may, therefore, seem desirable to the governments from both these points of view with considerable commitment not only of budgetary but administrative resources to such a program.

The need for a narrowly defined price range is, however, much less clear in the case of growth of the agricultural sector, although it is often argued that price instability reduces farm investment and supply, and that larger levels of instability may be associated by farmers with larger risks.³² How important price stability is to agricultural growth will depend, among other things, on the degree of stability of yields, the proportion of the production that is marketed and the price elasticity of demand.

In cases where yields are stable, even if there is considerable price instability, if the magnitude of the lowest prices that are likely to be reached are more than compensated by a certain *assured* increase in yields, the innovation may still be profitable and attractive. The yield stability or guaranteed minimum prices may thus minimize the importance of price stability.³³ However,

in situations where price instability is combined with yield uncertainty, it may increase the risk and, therefore, discourage adoption of new innovations. Given the dependence of the traditional agriculture on the weather and the consequent tendency for fluctuating yields, some degree of price stability may therefore be important in ensuring return to new innovations. However, where scope exists for reducing yield instability, as for instance through investment in irrigation, this latter may be a better alternative in the long run, particularly if the costs of price stabilization program are comparable with those of investment in yield stabilization.³⁴

Given everything else, the more inelastic the demand with respect to price the greater the income instability, if the farmer markets all his produce, as is likely to be the case with larger commercial farmers. A price stabilization program may, therefore, be useful in stabilizing incomes of such farmers and, therefore, in increasing their investment. However, the smaller the portion of the total produce that a farmer markets, the more elastic is his marketed surplus likely to be with respect to production, assuming that the demand for food for domestic consumption is inelastic with respect to production. In such a situation, even the price inelastic demand may not be as income destabilizing. A price stabilization program may, therefore, be less necessary or beneficial in the case of small than large farmers, as a way of inducing investment.³⁵

However, in considering the government's role in this context, distinction must also be made between price instability and price risk. Risk is usually defined to mean the difference between expected and observed prices. It is argued that in some cases observed prices could be highly variable, but if expected prices vary with observed prices, risk may still be small. Particularly with a linear investment function, the same level of investment would result over a period of time under stable and unstable income streams provided that average incomes were the same in two cases. Only the timing of investment would be different. The risk factor, on the other hand, is said to have considerable adverse effect on investment.³⁶

The conclusion of these complex considerations is that, in the case of the agricultural sector, fixing minimum and maximum prices within a certain range may be necessary both for commercial and commercializing farmers so as to reduce risk; but that unlike from the viewpoint of the urban industrial sector, it may be less necessary or desirable for agricultural growth to stabilize prices within such narrow ranges as to come close to fixing a single controlled price of the type that is currently followed by most governments.

If set at too low a level, a small price range also comes close to being a tax on agriculture of the type currently imposed by many governments, whereas if set at a high level it implies a considerable subsidy to agriculture. A broader price range, on the other hand, can pass on the gains of price increases to the farmer without taxing the government's budgetary and administrative resources excessively.

Where the resources for price stabilization come from will determine the net incidence of the cost of the program among classes and sectors. If they come from revenues earned through concessionary imports of the type

discussed earlier, then, of course, there is no domestic burden of price stabilization. However, resources may also come from imposition of additional direct or indirect taxes in either or both sectors, or through foreign assistance with complex and highly variable net effects on the various classes and sectors. These must be analyzed on an individual country basis to arrive at judgements as to the desirability of the net transfers implicit in price stabilization.

Throughout the previous discussion, arguments have been made to indicate why the government's role in pricing and marketing should be confined only to that defined by the size and scope of the price stabilization program, and why the price range itself should not be excessively narrow. In the sections below, a more positive reason has been advanced for this contention, namely, the very considerable potential of the traditional sector to perform a number of important functions with regard to pricing and marketing, provided certain preconditions are ensured by governments.

5. CHOICE OF MARKETING INSTITUTIONS FOR OPTIMAL POLICY

5.1. *Traditional trading systems*

Despite differences among countries both with regard to the stages of market development and to availability of documentation, considerable evidence has accumulated with regard to the working of traditional markets dispelling stereotypes about the degree of oligopolistic tendencies and spacial and seasonal price differences.

It is generally believed that there are only a few intermediaries at each level of marketing and that as a result collusive tendencies and price fixing is rampant in traditional markets. It is also argued that because there usually is a long chain of intermediaries from the producer to the consumer, it results in high costs of marketing. Evidence, however, indicates that entry in traditional trade is generally free and that there is overcrowding and significant competition at each level of marketing.³⁷ Most rural traders work with small amounts of capital, on low margins and earn a meagre income.

Few traders may, nevertheless, be seen to handle a large share of the marketed surplus in many markets.³⁸ Evidence indicates overwhelmingly, however, that they are not able to influence prices through collusive action if transport and exchange of market intelligence among producing markets and between producing and consuming markets are effective.³⁹

Intermarket price differences are usually small and commensurate with the costs of transportation and handling. For instance, contrary to the general view even small farmers in village markets in India are observed to receive prices commensurate with those prevailing in larger wholesale markets.⁴⁰ Excessive price differences among markets arise because of:

- (a) Poor dissemination of price information and poor communication facilities which do not allow transmittal of knowledge of price disparities effectively among markets,
- (b) inadequate and unreliable transport facilities that often result in

accumulation of surpluses in producing areas and shortages in consuming centers, particularly in the immediate post harvest period,

(c) poor transport and handling facilities that result in losses in the quantity and quality of crops during movement of grain,

(d) lack of implementation of standard weights, measures and/or marketing charges that allow scope for cheating, and

(e) lack of enforcement of an open bidding system.

There are also reasons why markets seem more inefficient than they actually are including: (i) price differences among varieties and grades of crops which lead to the impression of monopolistic elements in trade if price data in the two markets being compared do not refer to the same grade or variety, (ii) movement restrictions imposed by the governments that increase price disparities, and (iii) speculative tendencies that are caused by frequent overall shortages, and often exacerbated by sudden imposition and withdrawal of government restrictions on trade.⁴²

These factors suggest that the solution to monopolistic practices is not to discourage trade through overt or covert means, as is done by many governments, but rather through governmental action to remove the above conditions which lead to monopolistic practices. The former course usually only exacerbates exploitation, by reducing the number of intermediaries and thus by increasing opportunities for monopolistic practices.

Facilitating efficiency in traditional trade is necessary as rural traders perform a number of important functions that cannot be replaced by government or cooperative agencies, without incurring substantially greater costs in administrative manpower and finances than is implicit in allowing the private sector to operate.⁴³ Traders function in the remotest and least accessible areas where government or cooperative machinery frequently does not reach, thus performing an important function of providing a market channel for the rural surpluses, and in many cases also fulfilling the consumption needs of the rural communities by selling consumer goods, thus providing further incentive to produce for the market.⁴⁴ They meet an important credit need of the small producers, including the need for consumption credit. Government agencies are unable to administer credit in small amounts, particularly for consumption, without incurring substantial administrative costs and defaults.⁴⁵ The timely availability of the much needed credit is an important reason why farmers continue to turn to private traders even if alternative marketing channels are available. Timely provision of services, including their presence when marketed surpluses are available, is of course the other reason for reliance on private traders. These various needs of the rural communities are generally greatly underestimated by policy-makers in replacing or discouraging traditional trade.

The other usual allegation about the private trade is that farmers sell their surpluses in the immediate post harvest period when prices are low because of (i) their heavy indebtedness to the village traders and moneylenders, (ii) their need for cash for paying taxes and debts and (iii) inadequate storage facilities at their disposal. Off-seasonal prices, on the other hand, are said to rise

significantly higher than costs of storage and normal profit, allowing traders to make excessive profits.

The evidence is once again much less supportive.⁴⁶ It indicates that there is considerable variability in the pattern of seasonal price movements and that this pattern is usually difficult to predict leading to considerable risks in storage until the off season. The profits of traders when averaged over a number of years are not excessive, as high profits in some years are compensated by low profits (or even losses) in other years. Given this pattern it is questionable whether transferring the storage function from traders to farmers will necessarily result in farmers earning a significantly higher price unless there is an overall price policy that reduces risks. Thus it is not so much the low price received by farmers, but the lack of choice open to them as to when to sell, which has been the unacceptable feature of traditional trade. With increases in income and awareness of markets, this pattern has already begun to change significantly in many cases. Farmers are beginning to sell less in the post harvest period and to hold more stocks until the off-season to improve the price they receive. A number of steps of the type discussed in the final section of this paper, nevertheless, need to be taken by governments to further improve bargaining power of the farmers, none of which involve so drastic a step as discouragement or abolition of private trade.

5.2. Marketing cooperatives

Cooperatives have been promoted in many countries, through substantial commitment of finances and manpower, as an alternative to private marketing channels to augment competition and thus to improve the bargaining power of and the prices received by farmers. Several other steps have also been taken by governments to encourage growth of grain marketing in the cooperative sector. For instance, in many countries marketing cooperatives are appointed agents of the government in procurement of marketed surpluses or certain functions, such as paddy processing, have been completely delegated to them.⁴⁷

Marketing cooperatives have been generally effective in dealing with traditional cash crops such as sugar, cotton, tobacco and coffee. They have, however, failed to make a headway in marketing of food crops.⁴⁸ Because the difference in the experience has been so striking, and because marketing cooperatives continue to receive enthusiastic support from a very broad range of interests, it is important to understand the reasons for the differences in the cooperative experience in the case of export and food crops. These differences indicate that developing grain marketing cooperatives is indeed a difficult task and must be handled gradually and carefully. It is counterproductive to push cooperative development too rapidly as it usually backfires, frequently making cooperatives the haven of government subsidies and a barometer of inefficiency, in which the relatively more efficient private trade can survive relatively easily, defeating the purpose of augmenting competition among channels of marketing.

Because many cash crops require further processing, unlike food crops they cannot be used in domestic consumption or sold in rural markets. A

centralized marketing facility is, therefore, relatively easier to organize in such cases than for most food crops. For this reason, in the case of cash crops, the centralized marketing is usually also easily integrated with provision of credit. Credit has been much less well organized in the case of food crops, leading to the scope for considerable competition from private traders, as pointed out earlier. Second, the value added in processing of cash crops is usually substantial, also providing scope for economics of scale and thus providing greater opportunity for cooperatives to be viable as processing as distinct from marketing entities. Besides in the case of export crops, the price of the final product is usually sufficiently high to reflect the value added. Therefore, even if marketing and processing is not efficiently organized, cooperatives frequently are able to offer a farm gate price that is high enough to assure an attractive return to the farmer. When these conditions – in particular of scope for easy centralization of marketing and/or high international prices – do not hold, even cash crop cooperatives flounder as exemplified by the cotton cooperatives in Kenya or the cocoa cooperatives in Cameroon.⁴⁹ Third, the buoyant international market for some cash crops has permitted cooperatives to perform the relatively simple administrative function of procuring surpluses at a given price rather than requiring them to do the more difficult task of trading, involving decisions as to when and how much to buy and sell at various prices.⁵⁰ As pointed out earlier, because of the generally high degree of instability and uncertainty in the domestic food market, dealing with food crops involves considerably greater risk and, therefore, requires greater skill than the inexperienced management of most cooperatives can provide.

For these various reasons, development of food crop cooperatives must, by necessity, be more gradual and viewed as part of an overall policy package involving a well conceived and implementable price policy, reforms related to overall marketing of the type discussed below, and a well thought out training program. In initial years, cooperation among farmers may best be confined to relatively simple activities, such as their participation (i) in insistence on the use of standard weights and measures by private traders, (ii) on disseminating information on prices prevailing in other markets, and (iii) in construction of storage facilities where they may wish to store for the off-season, particularly if they are advanced credit for a portion of value of their crop as outlined below. Purchase and sale of surpluses on account of cooperatives may come as the next stage, when a more effective price policy has been formulated and when cooperative managers are trained and gain experience in management as well as in trading. In absence of such a gradual approach, cooperatives frequently become a marketing alternative in slogan more than in practice.

5.3. Role of the public sector

A far more broad-based and positive role for the public sector is implicit in the approach suggested in this paper than currently followed by most governments. This is not only because of the role envisaged for them in stabilizing food supplies and prices from year to year, through guaranteed prices and buffer stock operations, but also because of a range of public sector investments in market development that are considered essential to improve equity

and efficiency in pricing. To follow this course, decisions need to be made on a routine basis as to the level of minimum and maximum prices, the size of the marketed surplus that the government should control, and both the administrative and the financial means to acquire and distribute the marketed surplus as necessary. An investment strategy to develop the necessary physical and institutional infrastructure also needs to be developed so as to facilitate formulation and implementation of government decisions with regard to its direct role, and through improving performance of the trading sector to minimize its direct interventions. These steps are outlined below.

6. POLICY IMPLICATIONS

6.1. *Developing professional and institutional capability for formulation and implementation of the policy*

(a) *Improving data base.* Because a large part of the pricing and marketing problem arises from poor knowledge of the size and sources of food production and marketable surpluses, there is no easy substitute for improved data on yields and acreages under various crops by areas and by farm sizes as a way of estimating production and marketings. Developing a reliable data base requires considerable professional input and the training and developing of the staff for data collection and analysis. It is, therefore, necessary to begin this process as early as possible without expecting dramatic short-term results.

Expertise and institutional capability must also be developed within the government to collect and analyze information on (i) factors that should enter formulation of floor and ceiling prices, (ii) size of buffer stocks, and (iii) actual behavior of prices and marketings by crops and by seasons. All these sets of data will, of course, have to be collected by geographical locations. The considerations that should enter data gathering and analysis with regard to minimum and maximum prices and buffer stocks are already discussed in the main body of the paper. Those with regard to collection of actual prices and marketing are discussed in the section on market regulation.

One of the reasons why administrators are often wary of recommendations involving further data gathering is the very little feedback that available information usually has in policy or program formulation and implementation.⁵¹ The solution to this problem is, however, not to avoid information gathering but rather to examine how it may provide an input into decision-making. This should be an important consideration in determining functions of the institutions to be responsible for data collection and analysis. On the one hand, they have to have the necessary pressure to be responsive to the policy and operational needs of the agencies responsible for pricing and marketing, in their gathering and analyzing data; on the other hand, they need the professional independence to carry out reliable data collection. Whether such data gathering units are established within the ministry of agriculture or planning or as autonomous entities will depend on how well they can do these two functions from within and outside the normal governmental structure.

(b) *Policy implementation.* In addition to creating the various data gathering units and a central policy formulating unit, an agency will need to be

given the responsibility of carrying out the task of purchases and sales and the maintenance of buffer stocks involving staff, storage and transport facilities both at headquarters and in major producing and consuming areas.

6.2. Regulation of traditional markets

Governments have spent few, if any, resources on improving performance of the traditional markets. The Indian experience with regulated markets provides one of the few exceptions from which a number of useful insights can be derived as to the possible lines of approach in this very important area.⁵²

(a) *Declaration of market centers where marketing practices are regulated.* Governments may declare many of the important existing assembly centers as "regulated" markets where standardization of weights and measures, fixed marketing charges and traders' commissions, open auctions, standard methods of payment and grading, etc. may be enforced through a regulated market committee consisting of representatives of farmers, traders and government officials. Ministry of Agriculture may establish a Directorate of Marketing and Inspection to carry out this function.

(b) *Collection and dissemination of market information.* The Directorate of Marketing and Inspection may collect and disseminate information on prices and market arrivals by appointing an investigator in each market committee for recording and forwarding the necessary statistics. In addition, as and when necessary, it may have to conduct farm-level surveys on an ad hoc basis through its own staff or through use of universities to assess the size of marketable surpluses. Given the erratic behaviour of farmers, the knowledge of farm-level stocks is extremely essential for formulating government policy with regard to public sector stocks.

To increase the market consciousness of farmers, information on prices prevailing in the various important producing and consuming centers and the floor and ceiling prices at which the government will buy and sell may be disseminated routinely and actively by the Directorate through all possible means including radio, newspapers, bulletin boards in marketing centers and announcements in villages.

6.3. Construction of storage facilities

Losses in handling and storage in many developing countries are significant and lead to considerable inefficiency in marketing. However, there is a great deal of myth about excessively high storage losses at times leading to the conclusion that the food problem can be solved if only improved storage facilities were constructed.⁵³ It is important to ascertain the precise nature and magnitude of losses by stages of marketing, crops and areas as fancy high cost storage construction may not always be justified by savings in losses.

Expansion of storage facilities is necessary not only to reduce losses in storage by farmers and in the trading sector, but also to improve staying power of the farmers and to be able to hold public sector supplies in strategic places in producing and consuming areas to effectively implement the buffer stock policy. Storage may be built at three levels of marketing.

First, farmers who individually or collectively wish to build relatively simple, scientifically constructed storage facilities at the farm or village level should be assisted with credit and knowhow on construction.

Second, government may either provide credit or participate partially or fully in constructing storage facilities in the major assembly market centers in producing areas for the use by farmers and by the public, private and cooperative trading agencies. One of the most effective ways of improving staying power of the farmers is to advance credit to them for a portion of the value of their marketed surplus (70 to 80 percent of the harvest price) on the basis of the voucher for the surplus deposited in such public warehouses. As appropriate, commercial, cooperative or government agencies may be given the responsibility to advance credit, with proper attention to ensure that the credit activities of the various agencies are well coordinated. With cash available for payment of taxes and debts, the farmers will then have the option of holding stocks until the off season to fetch a better price. Similar facilities may also be provided to the private and cooperative trading agencies. The government may then use the percentage of the value advanced in the form of credit as a way of controlling the supply of credit and thus of manipulating stocks in the farming and the trading sector to avoid excessive speculative stocking.

Warehouses for storage of surpluses in the public sector in strategic consuming centers, including in deficit rural areas, is the third type of investment necessary both for timely release of stocks when distribution is deemed necessary as well as to stabilize speculative price increases that arise in periods of critical shortages. Although considerable storage facilities are usually constructed at ports and in large urban consuming centers, in most developing countries little attention has been given to assessing needs and developing facilities for holding stocks in deficit rural areas for distribution and price stabilization. From all indications, Mainland China appears to be one of the few exceptions where each production unit is encouraged to hold sufficient stocks to alleviate shortages arising from normal production fluctuations in every defined area.⁵⁴ Such a policy would, of course, also require that not all the surpluses be mopped up for distribution in the cities.

6.4. Development of a transportation network

How effective the interventions outlined above are will depend on how well producing areas are connected to assembly markets and the assembly markets in turn to the consuming areas. This means investment not only in trunk roads, but in feeder roads connecting rural areas with each other and with market towns. In general, governments have spent few resources on development of rural infrastructure. The main emphasis has been on connecting large urban centers with each other and with major producing centers.

7. CONCLUDING REMARKS

This paper emphasizes the following important points. First, it stresses the need for guaranteed minimum prices for a few key crops the production of

which needs to be increased. Second, it illustrates the complexity of considerations that need to enter formulation of minimum prices and stresses the need for developing the domestic professional and institutional capability, both of a conceptual and statistical nature, to determine appropriate price levels. Third, it outlines the nature of considerations that should enter formulation of maximum prices, and the fiscal and administrative implications, particularly of a stabilization program that is narrowly defined in terms of the price range. Fourth, it stresses the need for the implementing capability to effectively carry out the government role in pricing and marketing and the nature of investments necessary to improve that capability. Finally, it emphasizes the very important role that the traditional trading sector can play in carrying out the pricing and marketing function, particularly until the cooperative sector develops and, therefore, the way to augment that potential.

NOTES

¹See Mellor [47] for empirical evidence on income effects of changes in prices of food grains in India among various classes and for extensive review of literature on related issues.

²See Mellor [45] for further discussion of this issue.

³This, of course, holds only if the cost of labor increases at a rate higher than the cost of capital. The policy of capital subsidization followed by most governments usually ensures that this is the case, a tendency that is reinforced by the enforcement of minimum wages, particularly in the case of industrial labor.

⁴See Mellor [48] for an excellent discussion of the role of wages goods in industrial strategy.

⁵See Lele [38] for the discussion of the history of government controls on Indian grain trade. Also see Anshel, K. R. [4], Helleiner [17], Jones [25] and Moyer and Hollander [49] for discussion of the government controls in some of the African countries.

⁶See Lele [38], pp. 104–108, for evidence on intermarket wheat prices between Punjab market and Bombay during periods of controls and free trade.

⁷In India concessionary imports, at times, constituted up to 95 percent of the quantities distributed by the public sector domestically. These not only provided counterpart funds which could be used for domestic expenditure, but also led to revenues for the Government through the difference in the c.i.f. and retail price of PL 480 surpluses, allowing subsidization of domestically procured grain for urban consumption in the sixties. See Lele [39].

⁸See Lele [38, 39] for discussion of this problem in the Indian context.

⁹See Lele [41] pp. 107–108 for discussion of the import and export policies of the Ethiopian Grain Corporation and their effect on adoption of innovations in the Chilalo Agricultural Development Program.

¹⁰See Parthasarthy [54] for an excellent review of literature on increased market dependence in India. See Lele [41], Chapters II and III for discussion of the effect of export crop development on market dependence in many African countries.

¹¹See Lele [39], Table 1, for quantities of food distributed in India during 1952–53 and 1973–74.

¹²Tanzania, for instance, considered a takeover of retail distribution but abandoned the idea due to its infeasibility.

¹³This pattern of market withdrawal was noted as early as 1957–58 in India; (see Lele [38] for discussion of market arrivals.

¹⁴See Parthasarthy [54] for additional review of evidence.

¹⁵See Government of India [16] for evidence.

¹⁶See Lele [37] for evidence.

¹⁷In India in years of controls the grain that would normally be handled through wholesale trade is brought to cities in headloads. Although retail price of this produce may be between two to three times that sold in fair price shops operated by the Government, a small share of it goes to the farmer, due to the clandestine nature of trade and a large number of intermediaries. This is in contrast to periods of free trade. See Lele [38].

¹⁸It is important to note this distinction as there is frequently a simplistic tendency in literature on agricultural development to argue that pricing policy is not as important as technological change, a superficial interpretation which leads to undermining the importance of a guaranteed price support program. See for example Mellor [45] and Parthasarthy [54].

¹⁹See Krishna [30], Mellor [47] and Parthasarthy [54] for excellent review of literature.

²⁰See Lele [41], Chapter II, for review of literature and discussion of issues related to labor allocation.

²¹See Lele [41], Chapter II, for discussion of the factors explaining growth of export crops in Africa.

²²See Krishna [30] and Parthasarthy [54] for review of literature. A noteworthy exception is the excellent study of the role of intersectoral terms of trade in growth of Taiwan's agriculture. See Lee [33].

²³How profitable such investment is must, however, depend on what value is placed on increased food supply, not only in the short run but in a more dynamic sense of how the increased food production may be used to serve an employment-oriented growth strategy. See Mellor [48] for discussion of this issue.

²⁴See Krishna [30] for support of these various arguments.

²⁵Once some prices are regulated the temptation to extend regulations and controls to all crops is, however, usually substantial and especially needs to be avoided.

²⁶For discussion of several other issues see Krishna [30].

²⁷See Lele [41], Chapter II, for discussion of these interactions.

²⁸Leaning towards a shadow wage will, of course, be less favorable to the growth of the subsistence agricultural sector than opting in favor of the minimum wage.

²⁹See Lele [41], Chapters II and VI, for discussion of these issues.

³⁰The food pricing must, therefore, be viewed as part of an overall development strategy. A more employment-oriented strategy that generates effective demand may have to be combined with increased support prices. In absence of such a strategy, raising prices up to the parity level may, however, not always be justified.

³¹For instance, a very conservative buffer stock of 10 million tons of grain for India (i.e., about 8 to 9 percent of its annual domestic production) would involve an annual carrying cost of approximately \$250 million to \$300 million (assuming annual interest cost of 10 percent, storage losses of 5 percent and the investment costs in storage facilities amortized at 5 percent of the value of the 10 million tons of grain at \$120 to \$150 per ton). This expenditure is equivalent to the planned annual financial allocations of the Indian Government to irrigation investment of all types during the Fourth Plan Period, about 35 percent of the annual World Bank assistance and 50 percent greater than the total US assistance to India, both at the current rate. If such investment is made in expansion of irrigation facilities, as for instance in the eastern Gangetic Plain, this may have a substantial impact on increasing and stabilizing yields. Most governments may have to have buffer stocks which are not too dissimilar to the above, in terms relative to their domestic food production and current investment in agriculture, as the normal fluctuations in weather lead to annual production fluctuations of between 10 to 20 percent. See Lele and Mellor [34] for discussion of levels and fluctuation in production.

³²See Tomek [63] for discussion of these issues.

³³This may, however, mean considerable fluctuations in incomes, the effect of which on investment needs to be considered as discussed in the text below.

³⁴This may explain the emphasis in Mainland China on developing areas of high and stable yields as one of the major focal points of the agricultural pricing policy. See Timmer [62].

³⁵This, however, does not minimize the importance of a guaranteed minimum price for small farmers, particularly in its importance in enhancing certainty of return to

investment. See Schluter [58, 59] for the importance of risk and uncertainty in adoption of innovations by small farmers.

³⁶Where price fluctuations arise from weather factors rather than from unpredictable government interference, it could be argued that the difference in the expected and actual prices and, therefore, the risk, may generally not be high. To the extent that the government policy increases predictability of price movements, it may reduce risk and facilitate production even without a narrowly defined price range.

³⁷See Anthonio [5], Bauer [6], Cummings [8], Dewey [11], Farruk [12], Gadgil [13], Galbraith and Holton [14], Hermann [18], Hill [19], Hirsch [20], Jasdhanwalla [23], Jones [24, 25], Kriesel [27], Kulkarni [28], Lele [35, 36, 38, 39, 41], Manig [44], Nightingale [52], Rao and Subbarao [55], Satyapriya [57] and Thoday [60, 61].

³⁸In 1967, six major sorghum markets in the Marathwada Region in Maharashtra State, India, had between 71 to 281 commission agents and wholesalers of type "A" alone. And yet, only 10 percent of the traders handled over half of the total volume of jowar traded in the markets. See Lele [38]. Investigations in Punjab in 1967-68 also indicated that despite the nearly 40 to 50 traders that were registered in each of the five large wholesale markets, only two traders in Barnala, four in Jugraon and five in Kotapura handled over half the wheat arrivals in those markets. See Lele [38]. Similar concentration has been noted in a number of other studies. See Lele [39].

³⁹During free trade, covering the 1955-1965 period, the difference in the wheat prices of comparable varieties between Moga in Punjab and Delhi was less than Rs5.00 over 90 percent of the time, i.e., barely adequate to cover costs of shipment of a quintal of wheat between the two markets (see Lele [38], p. 108). Such high degree of price integration has been found in a number of studies on India, which are listed in footnote 37 above. See in particular Cummings [8], Gadgil [13], Kulkarni [28], Lele [35, 36, 38, 39], Rao and Subbarao [55] and Satyapriya [57]. Although - for a variety of obvious reasons, including lack of data on standard prices - price movements show less close relation between markets in African countries, prices in primary markets are generally observed to move in line with those in consuming centers. See Jones [24, 25] and Manig [44].

⁴⁰The study of village pricing of paddy in Cuttack district in Orissa, West Godavari district in Andhra Pradesh and in Thanjavur district in Tamil Nadu in India by Rao and Subbarao is of particular interest because it relates to the 1967-68/1969-70 period when new paddy varieties had been introduced in many areas, generating additional surpluses and reducing bargaining power of the producers somewhat. Among other things, the study compared the prices received by large farmers with those by small farmers. Their findings indicate relatively minor differences ranging from 0.5 to 6.0 percent between village and primary market prices. The differences on the high side, i.e., of 5.0 to 6.0 percent, arose in the case of the flooded zone in Cuttack and the waterlogged old delta in Thanjavur, where village to market transport was poorer in comparison with other markets. In the Thanjavur villages there was also greater inequality in the land ownership and thus poorer bargaining power of the small farmers vis-a-vis the moneylender/traders. Price differences were negligible in cases where infrastructure was well developed. Prices received by small farmers were somewhat lower, but the difference between those received by large and small farmers was insignificant either by timing, which itself was not significantly different in the case of large and small farmers, or by location of their sale, or by the agency (i.e., moneylender vs primary market trader) to which the sale was made. The study concluded that the "fixed margin (2.5 percent of the price) realized by the moneylender from the small farmers may be attributed essentially to the diseconomies of small-scale purchases, as the time taken in collecting the small quantities of produce for their disposal in the bigger market, transit losses and the discount on the quality of produce owing to its heterogeneity would be greater (per unit of output) than in the case of bulk sales by a few large farmers". See Rao and Subbarao [55] p. 28.

⁴¹This is the overwhelming consensus of the studies cited in 37 above and many others that are not cited here for lack of space.

⁴²See Lele [38] particularly Appendix 2, p. 238, for detailed discussion of the importance of price specification in examining market integration.

⁴³In the Chilalo Agricultural Development Unit in Ethiopia, the costs (excluding overheads to the project management) of marketing wheat between Asella and Addis Ababa were more than twice as much as those incurred by private traders. Many other agricultural projects in Africa have encountered problems due to undertaking similar high cost market interventions. See Lele [41], Chapter VI, for discussion of these issues.

⁴⁴After much experience in procurement, the senior management of the Food Grain Corporation of India recognized that this is a very major limitation of government agencies in purchasing market surpluses and results in substantial administrative costs. (Based on personal discussions in 1969–70.) Where private trade is very active, as in Punjab and Haryana, the FCI has, therefore, relied on traders to act as commission agents of the Corporation in its procurement operations. Many observers argue that although this reduces FCI's administrative costs and problems and in short crop years, to some extent, shifts the political burden of procurement to traders, it does not serve the function of creating competition for traders by providing an alternate channel of marketing to the farmers. In any case, the example highlights the problem of even an experienced and well-staffed government agency being able to carry out the marketing function satisfactorily except in a marginal role. See Lele [39] for further discussion of the procurement problems. Also Lamade [31].

⁴⁵This is one of the reasons why the management of the Wallamo Agricultural Development Unit in Ethiopia began to provide consumption credit to farmers. See Lele [41], Chapters V and VI.

⁴⁶See Lele [35, 36, 38], Cummings [8], Jasanwalla [23], Jones [25], Kulkarni [28], Rao and Subbarao [55], and Satyapriya [57].

⁴⁷See Lele [37].

⁴⁸Despite much support, cooperatives on the average handled only 3 percent of the total market arrivals of grain in India in the sixties. See Rao and Subbarao [55]. Also see Lele [41], Chapter VI, for discussion of cooperatives; also Anshel [4] and Widstrand [65].

⁴⁹See Lele [41], Chapter VI.

⁵⁰This is one of the major reasons of the success of cotton cooperatives in Tanzania. See Lele [41], Chapter VI; also Collinson [7] and Maguire [43].

⁵¹See Lele [41] for how this affects quality of planning and implementation.

⁵²See Lele [38, 39] for discussion of the role of regulation in Indian grain trade.

⁵³Contrary to these assertions of high storage losses, made largely by international agencies such as FAO and USAID, the studies on grain trade indicate relatively minor losses, particularly in the traditional trading sector. See Cummings [8], Kulkarni [28], Faruk [12] and Lele [34, 36, 38, 39].

⁵⁴Timmer [62].

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OPENING DISCUSSION – A. J. Badillo, *Venezuela*

This paper is one of the best contributions to this Conference. It goes straight to the major role that agriculture should play in any market economy pursuing a strategy for industrial growth, namely, to provide basic consumption goods – food and fibres – at the lowest possible prices.

Mrs. Lele argues that in countries where agricultural prices tend to rise as a result of permanent supply-demand disequilibria, this major agricultural role is ordinarily operated through governmental pricing and marketing control mechanisms, leading to inefficient use of government and private resources. These conditions seem to fit most of the Third World economies. Because of this strictly economic failure of the usual government policies, alternative pricing and marketing mechanisms are necessary if agriculture is to play its role efficiently.

My comments deal mainly with the thesis she develops in order to explain the need for governmental mechanisms of price control and her interesting analysis of current pricing and marketing policies through the Venezuelan case.

Mrs. Lele describes the main objectives of pricing and marketing policies and evaluates the performance of current governmental mechanisms with respect to the efficiency and degree of success in meeting those objectives:

(a) In respect of *reducing marketing margins*, according to Mrs. Lele, the alternatives of government or co-operative marketing have neither been very successful in guaranteeing narrower margins nor in improving competition. She argues that bypassing the considerable potential of the traditional marketing systems – in a clear reference to traditional mechanisms of marketing, with decentralized and multiple decision-making – explains at certain levels the failure of government involvement. I think that this fact cannot be generalized. Once a country is advanced enough in its first stage of industrialization (or import-substitution) strategy – as are some of the Latin-American countries – monopolistic marketing patterns arise with the setting up of monopolistic urban agribusinesses covering the whole domestic market. They may have high unused capacity. These industries exert price control through direct mechanisms (quotas, quality control, future price and other contractual arrangements) or indirect mechanisms such as governmental pricing policies or government marketing of agricultural inputs. Through these monopolistic or administrative mechanisms, prices are kept fixed, or growing at a lower rate than industrial prices. Thus, new systems with a high degree of centralization are involved, not traditional ones.

Commercial profiteering or speculative groups appear also in the marketing of unprocessed foods (food staples) in governmental sponsored central or terminal markets. These are known as speculative “*roscas*” in Venezuela.

Thus, it is not a traditional marketing system which sets a problem, but one whose objectives are in contradiction to those on which an industrial strategy is supposed to rest. Monopolistic or oligopolistic food processors and traders do not guarantee low margins but high and increasing ones.

In both cases, direct governmental control of agribusinesses (first-stage industries) and marketing margins is necessary, in addition to other mechanisms leading to productivity increases (agricultural and marketing infrastructure adjustments, research, technical assistance, etc).

Improving competition can have a significant impact on pricing efficiency. Direct mechanisms to check excessive margins and improving competition through co-operatives, or agribusinesses owned by groups of farmers, seem to be practicable when diversification of capital toward more profitable financial, commercial and industrial areas is operative.

In the meanwhile a contradiction arises between the low food prices needed and the high margins sought in monopolistic marketing and agribusinesses. This contradiction can be reconciled only under the following conditions (i) when profiteering commercial groups are not emphasized as necessary in an industrial strategy; (ii) when agribusinesses start to lose attractiveness to owners of capital who are eager to invest in more profitable areas.

(b) *Price and supply stability* – I agree that the only effective mechanism is a governmental one.

(c) *Ensuring a low cost supply of food to the urban sector* – Ensuring supplies of basic commodities to marginal or unemployed sections of the population has not been a major government objective in most Latin-American countries. Keeping marginal population from starvation is

important in pure governmental or entrepreneurial economic terms and not only on welfare grounds, but what seems relevant to an industrial strategy and to capitalistic industrial groups is the wage rate and the effect of food prices on it.

Agricultural supply shortages and high prices almost always lead to demands for higher wages, but Mrs. Lele's reasoning on price control gets around the point. Price increases lead to potential wage increases; the possibilities of making them effective depend on the specific labor-relation conditions and potential losses in capital gains or profits. That means that profitability of urban investments can be upset by pressures for higher wages, with the consequence that the pace and pattern of economic growth may be affected. Thus, price control is not only justified on pure welfare grounds but on governmental or industrial economic reasons, also.

If possible, industries will tend to substitute capital for labor, with consequent adverse effect on the employment rate. Thus, worsening of labor-capital conflicts arising from increasing food prices and potentially increasing wages are avoided through governmental price control.