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## The Agricultural Marketing System and Price Stabilization Policies

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THE AGRICULTURAL MARKETING SYSTEM  
AND  
PRICE STABILIZATION POLICIES

By

John W. Mellor

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No. 26

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Introduction

Agricultural marketing is already a major economic activity in all Asian countries. It encompasses a large amount of capital, entrepreneurial talent and labor in a highly developed system. Modernization of the marketing system therefore offers alternatives of improving the existing system, displacing that system, or developing complex interactions between an existing private system and a new cooperative or public system.

For many parts of the economy, economic development requires new institutions to perform functions not previously performed. Thus, the question of examining the efficiency of an existing system for meeting development objectives very often does not arise. It is, however, an exceedingly important question with respect to marketing.

In judging the existing marketing system, and in weighing alternatives of displacement and reform we must be concerned with three major objectives of (a) economic efficiency, including the capacity to expand to handle increased production; (b) capacity for technological change, a concern of particular importance in the long run; and (c) potential for mobilizing resources and putting them to efficient and productive use.

For each of these objectives I will examine the qualifications, performance, and scope for reform of the existing private sector and then use that as a basis for commenting on the potentials for improved realization of society's objectives through development of the public and cooperative sectors. Because many of the resources necessary for effective development of the public and cooperative sectors are exceedingly scarce I will approach my comments with respect to the public and cooperative sectors in a highly critical manner. I will continually raise the question as to how development of these public sectors may do a job which is unlikely to be performed as effectively with the resources available to the private sector.

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Following the exposition of the role and functioning of the marketing sector I will proceed to a discussion of price stabilization policies from the point of view of their effects on the marketing and processing sectors. I believe that our view of price policy has given far too much emphasis to its implications to farmer production incentives and far too little attention to the implications of price policy to the modernization of the marketing system. My comments on price policy will grow from the specific set of marketing problems I delineate in the first part of this paper.

Much of this paper is based on careful empirical studies of the marketing systems in Asian countries carried on by my present and former associates at Cornell University. I draw your attention in particular to Uma Lele's pioneering work on food grain marketing in India (soon to be published in one place by the Cornell University Press, Food Grain Marketing in India, Private Practice and Public Policy), M. O. Farruk's substantial work on rice marketing in East Pakistan, and Ray Nightingale's work on milk marketing in India.

### Economic Efficiency

The stereotype description of the traditional private marketing sector in low income countries is that it operates at a low level of efficiency in resource use. It is assumed that this low level of efficiency derives from the collusive monopolistic nature of the private trade, a condition which results in wide profit margins, ineffective and inefficient response to intermarket price differentials and, hence, large intermarket price differentials, large seasonal price increases and large processing margins. An alternative explanation of inefficiency and a somewhat conflicting one is that it arises from the atomistic nature of traditional marketing with resulting diseconomies of scale and low productivity of resources.

Because it is so often assumed that the traditional private marketing sector operates inefficiently it is assumed that there is in effect a very favorable situation for development of a public or cooperative sector marketing system. The assumption is that there are wide margins which may serve as a source of capital for expansion of the system and as a basis for savings for return to farmer patrons.

An increasing number of careful marketing studies suggest that this stereotype position is in error. First, it is found that the market structure of traditional systems is generally competitive. There are usually a substantial number of participants in well integrated marketing systems, with relatively easy entrance. In those situations, such as for commission agents in major wholesale markets, where the number of participants is small there is a tendency to have regulation of commissions. The commissions may indeed be set at levels which provide high rates of return to the resources provided, but if the number of participants is small and the volume per participant is large, large profits may derive from small noncompetitive increases in margin. Thus, in those cases of very large profits the costs to individual farmers and consumers may be small.

When we apply standard measures of economic efficiency to the operation of the private trade in Asian countries we, in general, find them operating quite efficiently. Although at first glance intermarket price differentials often appear to be quite large -- considerably larger than transportation costs -- we find that in practice this is usually due to poor specification of grade. With careful specification of grade, we find that intermarket price differentials rarely exceed the cost of transport, and when they do it is usually because of transportation deficiencies, such as those which arise when there is a heavy pressure on transportation facilities at harvest time and when natural calamities cause a breakdown in the transportation system.

In the case of seasonal price differentials we find they are on the average closely related to storage costs. However, in any one year the seasonal price change may be very much greater or less than storage costs; the years of extremely high profits being balanced by other years of extremely low or even negative profits. The highly erratic pattern of seasonal price fluctuations seems due largely to lack of knowledge concerning crop prospects and product storage stocks. As I shall point out later these erratic seasonal patterns inhibit technological change in milling and processing and their elimination would form a major objective of price policy.

Similarly with respect to processing margins for a crop such as rice, we find that on the average the margins are rather closely related to the respective paddy and rice prices and the costs of processing.

These increasingly well supported judgments about the degree of competitiveness and efficiency of the private marketing system have two important implications from the point of view of public policy towards the marketing system.

First, they suggest the desirability of substantial inputs of government resources into removing restraints on operation of the private system and encouraging the further increase in competition. It is clear that there are significant imperfections due to transportation breakdowns. Major expenditure to improve the quality and availability of transportation through improved road and rail networks and removal of restraints on transportation represents an important potential for improving marketing efficiency. This, in particular, would help to reduce intermarket price differentials and cause harvest induced price declines in producing areas to be passed on in the form of lower urban prices more rapidly than is presently the case. Improved information systems concerning crop prospects and storage stocks would help improve the efficiency of the seasonal market and result in less erratic seasonal price patterns. A government regulated and supervised system of grades and measures would increase knowledge in the markets and lead to greater uniformity in provision of market benefits. Similarly, increased availability of credit could increase competition by facilitating the entry of new entrepreneurs who are short of capital resources.

The second implication to public policy is with respect to development of the public and private sector in marketing. The greater the efficiency and competitiveness of the private sector, the more difficult it will be

for the public and cooperative sectors to compete. While the public and cooperative sectors may provide useful yardsticks of competition and help to increase competition, they will have to operate in a highly efficient manner if they are to serve this useful purpose. A good deal of the failure of the cooperative and public sector in marketing has arisen from a failure to recognize that the private sector is already operating reasonably competitively and efficiently and that an inefficiently operated public or cooperative sector will not be able to fulfill its social functions because of the economic losses incurred.

### Fostering Technological Change

It is not enough to find that a marketing system is operating efficiently by the usual economic standards. All that such efficiency means is that seasonal price rises are commensurate with storage costs, inter-market price differentials are commensurate with transportation costs, and processing differentials are commensurate with processing costs. Economic development, however, is very much a process of technological change which reduces costs. A system which operates efficiently by economic criteria but which is not conducive to cost reducing technological change is not contributing to economic development.

There are great opportunities for increasing the productivity of resources in the marketing channels in low income countries through processes of technological change. The processes require imagination, research, and adaptation to develop technologies suitable to the specific conditions to which they are to be applied. In addition, almost all new technologies require additional capital investment.

While the private sector may be operating efficiently by economic standards, very often it is not operating in a way conducive to rapid technological change. The private marketing sector tends to be dominated by tradition. It is often operated at small scale, such that the risks of innovation are high and the capital for taking such risks quite limited. In addition, in most Asian countries government policy toward the private sector in marketing tends to reinforce reluctance to innovate. The uncertainties involved in constant threats of government takeover are inhibiting to both investment and innovation.

Thus we find that the private sector in marketing tends to be efficient in its operation by economic criteria but backward with respect to technology. Once again we find two areas of considerable interest from the government's point of view.

First, public policy may encourage technological change in the private sector. Most important, the government can see to it that research institutions carry on the necessary research to develop and to adapt technology suitable to local conditions. Educational facilities can be provided to carry this technical knowledge to the private entrepreneurs just as extension services carry farm technology to private farmers. Government inhibitions ranging from threats of takeover to restraints on storage stocks and other methods of operation can be removed. Credit can be made available to the private sector to finance the capital required for technological change.

The second major thrust of public policy with respect to inducing rapid technological change in marketing in low income countries may be made through the public or cooperative sector. While these sectors may be in a poor position to compete with the private sector under traditional operating conditions, they may have a number of special advantages when it comes to technological innovation. Management should be less tradition bound and more at home with research generated knowledge. There should be good institutional contacts between sources of new knowledge and the cooperative and public sector. Access to credit and scale of operation should be conducive to the kinds of capital investment involved in technological change in marketing and processing.

Because of these advantages with respect to technological change and the disadvantages and competition under traditional technology it is useful to see the public and cooperative sectors as leading edges in modernization. One might envisage cooperative and public sector marketing institutions as emphasizing efficient business management but with a particular emphasis on developing new technology suitable to local conditions, thereby demonstrating their success and leading to more rapid private acceptance. We often speak of the yardstick value of public and cooperative business. By this we usually refer to their pricing policies and standard economic efficiency. Perhaps we should give more emphasis to the yardstick values in demonstrating new technologies and applications of technologies.

There is a danger in moving the public and cooperative sector heavily into blazing the path with respect to new technologies in marketing. New technologies which are basically inefficient may be taken up and then the public and cooperative firms protected in this inefficiency through rules which restrain competition. As a specific example, there are technological changes with respect to rice milling which make a good deal of sense. However, if large scale modern mills are taken up in countries which have small marketed surpluses the mills may tend to operate quite inefficiently unless they have monopoly control of a large proportion of the supply. They may operate inefficiently, but provision of monopoly control rules out competition and makes it difficult to recognize the inefficiencies. Such protection of inefficient operation is a poor use of scarce resources in any country.

### Mobilizing Resources

One of the most important elements of economic development is the mobilizing of scarce resources for economic development and making maximum use of the abundant resources. Three resources of particular relevance from the point of view of the marketing system are capital and entrepreneurship, which are both scarce resources, and labor, which is an abundant one.

The private marketing system taps capital and entrepreneurship otherwise not available for the development process. This is one of the primary reasons for attempting to reform and improve the private marketing system rather than displacing it. Similarly, the small scale private marketing system uses large quantities of labor in the production process.

In contrast there is considerable danger that public and cooperative marketing institutions will use capital resources from the public side which have very high opportunity costs in performing other public functions. There is, however, a substantial potential for cooperatives to mobilize rural savings resources and use them for technological improvement of the marketing system. Similarly, there is a tendency for the cooperatives to tap entrepreneurial talent which could be used for other administrative purposes in the economy and to use it for displacing the natural entrepreneurial talent available in the private sector. The further danger from the cooperative sector is that it may very often find that the kind of entrepreneurial talent which it uses is particularly inexperienced in handling labor. As a result there will be a temptation to substitute more capital intensive techniques for labor. The poorer the quality of management in the public and cooperative sectors the more likely it is to attempt to replace labor with capital investment.

### Price Stabilization

As economic development proceeds, the proportion of agricultural output marketed increases, and the proportion of marketings which are processed increases. In addition, technological change increases capital investment in the marketing and processing channels. It is these forces which greatly increase the importance of price stability.

Increased capital investment in the marketing system increases the pressures for full utilization of capital equipment and hence for long operating seasons. This, in turn, calls for maintenance of storage stocks to give assured supplies, or the need for price stabilization measures or both. If there is large capital investment and agricultural prices fluctuate substantially, then there are high costs of bearing the risks of those fluctuating prices. We find that the talent of entrepreneurs which might better go to efficient operation of a processing plant must be turned to the trading operations and the storage operations. Thus, we find that an agricultural price policy must be highly complementary to policies for facilitating and fostering technological change in the marketing and processing channels.

It should be clear here that the objective is not one of eliminating justified costs such as the seasonal price rise commensurate with normal storage costs or intermarket price differentials commensurate with transportation costs. What is needed is some predictability about these price differentials.

If one is to operate an agricultural processing plant one needs some predictability as to what the price will be in various months. If one has a high probability that the prices will be higher by a certain amount in one month than another, one can then operate efficiently. But if one has no idea what those seasonal price changes are going to be it becomes very difficult to operate a high capital intensity plant. These marketing oriented functions of agricultural price stabilization receive far too little attention in the literature. In practice price stabilization and price supports probably have very little effect on the level of production,



and yet we focus a high proportion of our attention in that direction. I would argue that they do have a great deal of effect on the efficiency of the marketing system and the rate at which technological change occurs in that system. We need to focus our attention much more in that direction.

The most important example of this set of problems is that of rice milling. Traditional low capital cost mills often run only a few months on a one shift basis. Modern mills need to be operated on a three shift basis for several months. In the traditional mill the entrepreneur is basically a trader; in the modern mill he is a processor -- and needs predictable prices if he is to concentrate his attention on processing. Feed mills for the livestock sector face similar problems as do milk processing plants, flour mills and other processing industries.

We also find excessive emphasis on price stabilization as a means of stabilizing farm incomes, and yet because of the relatively low proportion of production marketed on farms and the major effect of weather in determining the level of production we find that price stabilization programs are very often destabilizing of agricultural incomes. Thus again the development focus of price stabilization should be much more on facilitating cost reducing technological change in marketing and processing. In the rest of my presentation I will outline a price stabilization policy which fulfills this function.

#### Outline of a Program

For those commodities to be supported, a set of support prices would be set annually, with emphasis on support of that year's harvest season prices.

The support level would be determined annually by an appraisal of the current supply and demand situation -- the support level normally varying inversely with the size of the crop. The level set would be modestly below the calculated supply-demand balance price.

Purposes of this policy include protecting farmers against market imperfections and consequent sharp decline in price below the normal supply-demand balance price; stabilizing prices to processors of food grains, including rice millers and livestock feeders; protecting them from large erratic short-term fluctuations in prices and supplies; and protecting low income consumers from large erratic changes in supplies and prices.

Announcement of the support level would be made somewhat before harvest time, but sufficiently late to allow a reasonably accurate estimate of the domestic supply for that year. The government would accept deliveries at the support price, such supplies often being sold at a seasonably adjusted price the same year and occasionally carried over to later years.

In operating agricultural price programs it is important that provision be made for a seasonal price rise to cover full storage costs. If that is not done, the government operation will displace private storage at great total cost to the government. This could cause such a burden on government

administrative and financial resources that the system might break down. It would very likely create a general misallocation of resources.

Similarly, prices at specific markets must reflect full transportation costs. There is a substantial danger that price stabilization schemes will set prices in such a manner that the private trade is displaced by the government, and in circumstances in which the government is not prepared to offer the full requirements of efficient marketing services.

Setting of domestic agricultural prices must also be consistent with the set of trade policies to be followed. If domestic prices are set at a level significantly different from international prices, it should be done in full recognition of the implications to transfers of resources among sectors in the domestic economy and to that country's own trade policies.

### Policy Assumptions

The price policy recommended has four major assumptions:

1. Rapid agricultural development is a product of technological change which reduces costs of production. Technological change is a result much more of public policy towards research, education and input supply policies than a function of price policy. Inappropriate price policy may slow technological change, but the prime function of price policy is to meet problems resulting from technological change rather than to create such change.

2. In comparison with developed nations, the demand for agricultural commodities in developing nations is much more responsive to changes in price. Thus lower costs and increased production can be cleared by moderately lower prices.

3. Because farmers, especially low income farmers, retain substantial proportions of what they produce for home consumption, the effect of given market price declines on farm incomes is much less than in high income countries.

4. In the dynamic context of technological change and economic growth, the basic price problem for agriculture is one of year-to-year instability, a problem which is particularly great in low income countries where the operation of markets may be very imperfect.

### Support Level

The level of support should be determined by an estimate of the equilibrium price under the expected supply and demand conditions of the approaching year. Demand estimates may be based on projections of population and per capita income, estimates of income elasticity of demand and a measure of inflationary factors such as the money supply. Supply may be estimated either by simple observation or through projections taking into account changes in technology, inputs and weather. From such information a moderately reliable price estimating equation can be developed.

as indicated earlier, estimates of support price will have to be coordinated with national trade policy, requiring comparison of estimated support prices with estimated international prices and study of the likely effects of any discrepancy between the two.

If government capacity to support prices is weak and weather fluctuations large, it will be important to make the estimate close to harvest time. The weaker the government support power, the wider the level should be between buying and selling prices and the greater the allowance for seasonal price increases. If weather fluctuations are unimportant or capacity to support great, little will be lost by setting prices even in advance of planting, and the greater the risks that can be taken in setting prices close to estimated levels.

The proposal suggested here is complex and requires substantial numbers of trained personnel for its operation. It may fail for that reason alone. In leveling this criticism, it should be noted that the objective and the mechanisms are much less complex than price policies generally recommended. Any price stabilization program should be entered only after careful thought, full recognition of the problems, the probabilities of failure and the implications of failure.

Cost of production should not be an explicit basis for determining the support level partly because the context assumed is one of improving technology and hence declining unit costs. The basic incentive for expanding production is provided by declining unit costs and not by rising prices. For similar reasons, input subsidies are not recommended, except perhaps in early stages of innovation.

The objective of the policy stated is not a constant level of agricultural prices. When favorable weather has provided a large crop, prices would be lower than when unfavorable weather has provided a small crop. In low income countries, the scope to expand consumption, even of basic food grains, through lower prices is greater than in high income countries. Further, real incomes of farmers tend to be higher with a large supply than with a small supply. That is, of course, the opposite of the relationship expected in high income countries. The reasons for this reverse relationship are (1) demand fluctuates much more with respect to price in low income countries, and (2) a substantial proportion of basic food commodities are retained for home consumption and are not affected by a price decline incident to greater production.

There are two basic considerations in deciding how much below the supply-demand balance price supports should be set. First is the financial and administrative capacity to make support purchases; and second, the degree of precision with which the appropriate price can be estimated. The lesser the capacity to make support purchases and the lesser the capacity to estimate the normal supply-demand equilibrium price, the greater the discount to be set for the support price. The greater the discount for the support price, the less helpful it will be to farmers. On the other hand, if the support is set so high that it cannot be maintained, confidence in the government's ability to support prices will be destroyed and susceptibility to sharp price decline increased.

Announcement of the support level just prior to harvest season has the advantage of allowing more accurate appraisal of the supply situation, particularly with respect to weather. For most farmers in low income countries a constant price irrespective of weather effects on crop size will increase fluctuations in real incomes as compared to basic supply-demand equilibrium prices. Thus, a policy of setting prices prior to planting would normally provide less real income stability for the farmer than would setting them just prior to harvest. The converse is the case for consumer real incomes.

Supports announced prior to planting followed by unexpectedly large acreage planted or unusually good weather may place burdens on the government which it is not able to sustain. With a resultant sharp price decline, farmers would be even less willing to plan on the basis of government supports in the future. Recognition of this problem may require that supports established prior to planting be set at a level lower than would be justified by later information. This could form part of a useful two-stage setting of supports -- a conservatively low level prior to planting and a potentially higher level prior to harvest. It is, however, doubtful that the preplanting price would have sufficient credibility to be useful. It is also doubtful that political processes would allow this degree of fine tuning.

Although the objectives and mechanisms of price policy suggested here are modest, the effects on the total development process may be substantial. They will certainly be more substantial and useful than a much less modest set of proposals for price policy which prove to be inoperable because of underlying economic conflicts and lack of administrative resources.