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Economic Reforms of Agriculture and Rural Growth

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Successful rural growth episodes in India indicate a process of growth and diversification that is based on the development of producer services. A simple theoretical model of this process is sketched to suggest impediments to such a process of growth and thus to offer a possible explanation of rural stagnation in many areas in India. Agricultural policies in India of the present and the recent past are analysed in the light of such a framework.

Keywords: Rural Growth Process; Producer Services; Agricultural Policy in India; Economic Liberalization; Reform of Agricultural Sector

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SECTION 1

Introduction

1991 was a watershed year in Indian economy. The period since then has witnessed sustained changes in economic policies under the rubric of "economic reforms" in the areas of industry, trade, exchange rates and taxation. In addition, changes have been initiated in policies regarding the financing of government expenditure, the financial sector, infrastructure, the public sector and labor laws. Agriculture, which is still the biggest sector in terms of its contribution to income and employment has, however, remained outside the scope of these reforms. While some controls have been eliminated or relaxed, these have occurred in a piece—meal fashion and not been offered as part of a clearly articulated strategy of reforms for the agricultural sector.

The absence of public commitment to rethink agricultural policies is not because the government has had little to do with this sector. The government, both at the central and state levels, maintains a heavy presence in agricultural markets.[1] Any suggestion to liberalize the agricultural sector seems to be much more contentious than the reform measures that have been already implemented in other sectors. The main reasons for this are twofold. The regulations affecting agriculture and the process through which they constrain farmers are not transparent. On the other hand, the inevitable rise in food prices that would result from trade liberalization is feared for its possible impact on the poor. The possible benefits of agricultural sector reform are thus elusive to most people while its costs are obvious. The goal of this paper is to present our view of why it might be "desirable" to liberalize some specific existing policies pertaining to agriculture.

We use the word "desirable" in a very specific sense; a measure is "desirable" if it reduces poverty. We believe that there is no more effective way of making an impact on poverty than bringing about a substantial rise in rural labor demand. We will endeavor to clarify the logic that links specific reform measures to the changes in rural labor demand. The objective is to describe a particular process of rural growth based on rural entrepreneurship that is feasible in present day India and then to examine the reform measures necessary for its success. Our case for the desirability of specific measures is akin to the case for agricultural sector reform as argued by Rao and Gulati (1994); the contribution of our paper will be in laying

out the process underlying the supply response to policy changes.

Any growth process based on entrepreneurial response in rural areas will depend very heavily on social investment in primary education and health. No self-sustaining growth is possible if the economic policies neglect these crucial sectors. Dreze and Sen (1995) make this point in a compelling way; we have little wisdom to add to what they have already said and we will leave this important but well-understood point out of our discussion. The paper will also not discuss some other important issues such as land reform, intellectual property rights and the environment. We will omit these important topics, though they are related to agricultural reforms, from our discussion in this paper because we believe that they deserve a detailed analysis in a separate paper. We will argue for the removal of only those regulations which, we believe, play no useful role in this respect. We will not advocate drastic measures such as removing land ceiling legislation or a blanket approval of privately lucrative activities with a potential to create huge social costs before appropriate environmental legislation is put in place (e.g., shrimp farming).

To many people, liberalization of the agricultural sector in India is synonymous with the equalization of domestic prices with the border (i.e., international) prices. The focus on the desirability of aligning domestic prices with the international prices by removing existing regulations on external trade such as the export and import controls and the canalization (i.e., parastatal monopolization) of trade is certainly an important component in the debate about agricultural sector reforms but is by no means the only issue. The domestic marketing and processing of agricultural produce is subject to a number of controls as well as interventions by state agencies. These include procurement levies on rice and sugar, monopoly procurement schemes such as in cotton, laws to curtail the storage of commodities, the prohibition of futures markets, formal and informal controls on the movement of commodities, and the licensing of milling activities (as in sugar). In addition, in many agro-processing activities such as for instance, the crushing of certain edible oils and poultry feed manufacturing, production is to be undertaken by small scale units only. As we shall argue, these domestic market regulations may be at least as important as external trade restrictions in inhibiting the propagation of potential growth processes in rural India. It is ironic that some of these mechanisms which were instituted in order to protect the poor from hardship may actually contribute to keep them in poverty.

In Section 2, we present a brief survey of some key issues that are important to the debate on the reform of agricultural sector. The discussion

leads to the motivating question for the rest of the paper: what are the determinants of successful rural growth in the Indian context? Section 3, describes three case-studies of rural growth in India which are characterized by a generic process that, we believe, offers the most likely conduit of rural transformation in India. Our perception of this generic process is sketched out in Section 4. We show that trade liberalization (as well as the provision of rural infrastructure) may set such a growth process in motion. Understanding the growth process allows us to speculate on the direct and indirect regulations on agriculture that might inhibit it which in turn leads us to comment on the desirability of specific reform measures in Section 5 and on the political feasibility of such reforms in Section 6. In the concluding section we reflect on the arguments made in this paper in the light of the Chinese experience of agricultural reforms.

SECTION 2

Trade Liberalization and the Poor: The Contending Arguments

As the poor spend as much as 40% of their budget on cereals, the well-being of poor consumers in India is directly connected to foodgrain prices. Not surprisingly, the measure of absolute poverty (i.e., the poverty ratio) has been found to be positively correlated with foodgrain prices or a measure of the overall price index, such as the consumer price index for agricultural laborers (CPIAL), where foodgrains receive a large weight (Mellor and Desai, 1985). Ravallion and Dutt (1995) have also shown that inflation (measured by changes in the CPIAL) hurts the poor through its effect on real wages. From their results, the elasticity of the poverty ratio to the CPIAL can be computed to be about 0.23.[2] They also show that these effects vanish in the long-run when real wages claw back to the earlier level. Since the international prices of foodgrains (especially rice) are higher than the domestic prices in India today, it is clear that trade liberalization will result in an increase in foodgrain prices in India (though by a smaller amount than the gap between the two prices on account of India being a large producer)[3] As consumers, therefore, the poor in India stand to lose, particularly in the short-run, as a consequence of trade liberalization.

Such an argument, however, ignores the fact that the majority of the poor in India live in rural areas; they are agricultural laborers, small and marginal farmers and others whose livelihood is tied to agriculture. Even

urban poverty is partly rural poverty spilled over into urban areas through migration. It may, therefore, be that the liberalization of the agricultural sector induces a supply response in rural India so large that the resultant increase in rural labor demand, and hence in wages, more than compensates for the increase in the price of consumption basket of the poor. In a simple two by two model (agriculture and industry being the only two sectors) of two competitive economies trading with one another, the Stopler-Samuelson theorem predicts that opening up the economy to free trade will increase real wages in India (assuming India to be the more labor-abundant of the two countries and agriculture to be more labor-intensive than industry) making the poor better off despite the rise in food prices. But the two by two framework of Stopler-Samuelson is much too simplistic and the assumption of constant returns to scale technology much too unrealistic to make this point convincingly.

Nonetheless, it can be understood that agricultural prices that are too low cannot be in the interest of the poor. This point is pursued in the strand of literature which argues persuasively that governments in several Asian and African countries have systematically discriminated against agriculture and ultimately this "urban bias" is what is responsible for the persistence of poverty (e.g., Lipton (1977), Schultz (1978), Bates (1981), Eswaran and Kotwal (1994). Since the principal instrument of this "urban bias" is agricultural price policy, it is legitimate to ask: would trade liberalization remove the so-called urban bias and help alleviate poverty?

If there is one robust fact that emerges from the studies of rural poverty in India, it is the strong negative association between the poverty ratio and agricultural growth (Ahluwalia (1978), Mellor and Desai (1985), Ravallion and Dutt (1995)). On the basis of data spanning the period 1958-1990, Ravallion and Dutt find the long run elasticity of the head-count index of poverty to farm yield to be over two and that 40% of this was achieved because of higher wages (the rest of the elasticity is presumably attributable to higher own-farm productivity gains or greater wage-labor employment in agricultural and non-agricultural occupations). Half or more of the long-run impact is reached within three years. These effects are not just limited to rural poverty. In another paper, Ravallion and Dutt (1996) discover that rural growth in India has also had significant spill-over effects on urban poverty.

The linkage between trade liberalization and poverty then rests on the issue of supply response. Empirical studies show that the output of individual crops is quite responsive to changes in the relative price of one crop with respect to another crop because the decision to allocate acreage across

different crops is sensitive to price changes. But the supply response of overall agricultural output to a proportional increase in the prices of all crops is usually low. In contrast, the elasticities with respect to technology (such as the availability of improved varieties) and infrastructure (such as irrigation and roads) variables, which are the outcomes of public investment, are typically high. These findings have been used to argue against the "urban bias" hypothesis (Nayyar and Sen (1994)).

On the other hand, long run supply elasticities which allow enough time for the fixed inputs to respond, can be quite high. In their study of supply response in Punjab for the period 1960-79, McGuirk and Mundlak (1991) estimate the aggregate supply elasticity to be 0.77 while the short-run elasticity was only 0.075. A principal factor for the difference between the long-run and short-run responses was the sizable increase in irrigated area that occurred during this period. Further, well irrigation (which is almost entirely the outcome of private investment) accounted for over 80% of the rise in net irrigated area between 1960 and 1979. The price (of crop output) elasticity of investment in private irrigation was as high as 1.395 which suggests that price incentives do matter in inducing technology adoption and supply response. Since the returns on private investment are believed to depend on complementary public investment, the role of public investment in boosting long-run supply response remains critical. It also explains why long term supply elasticities are high only in areas endowed with good infrastructure. If trade liberalization brings about an increase in public investment along with an increase in agricultural prices (at the same or lower prices of agricultural inputs), it is likely to lead to a sturdy supply response over the long run (a few years). If not, only infrastructurally well-endowed areas will experience a sizable response exacerbating the regional inequities.

In the "urban bias" hypothesis, the presumption of bias can itself be questioned. The pre-reform regime was distinguished, on the one hand, by a high level of protection (through tariffs and quotas) on industrial goods and a over-valued exchange rate, and on the other hand, by export controls and other means of indirect price-controls (e.g., levies) on foodgrains. The prices of what farmers bought were kept higher and the prices of what they sold were kept lower than what they would be in a neutral regime. This, in a nutshell, is why the pre-reform regime was characterized as "biased against agriculture". Sharad Joshi, the leader of Shetkari Sanghatana — a farmers' organization in Maharashtra, is the most eloquent exponent of the view that such a bias has been instrumental in perpetuating rural poverty in India (Joshi (1986)).

But how valid is the claim that government policies amount to net taxation of agriculture? In the Seventies, it was indeed so. But since then farmers' organizational strength has grown considerably. Farmers can now launch mass agitations just like industrial workers. They are now a dominant force in the parliament.[4] The improved political status of farmers has already resulted in some significant changes. Agricultural terms of trade have improved noticeably since 1985-86 (from 81% to 92% of their level in 1970-71). Subsidies to farmers have grown from Rs. 20 billion (in 1980-81 rupees) in 1981-82 to Rs. 80 billion in 1994-95. In fact, these subsidies have become a major drain on the public purse. Farmers get electricity and water at a fraction of the actual cost and they don't even pay income tax.[5] The Effective Subsidy Coefficient (i.e., value added at domestic prices plus subsidies on non-traded inputs divided by value added at world prices) computed by Pursell and Gulati (1993) is close to unity for 1986-87.[6] The economic reforms of 1991 "have virtually eliminated the already falling anti-agricultural bias" through exchange rate devaluation and the reduction of protection to the manufacturing sector (Rosenblatt, Pursell, Gupta and Blarel (1996)). Does this mean then that Indian farmer is neither taxed nor subsidized in the net? And if so, why should we expect that reforms would have any positive impact on rural poverty?

But implicit in this question is the assumption that the only impediment to a strong response is the unprofitability of rural investment due to the unfavourable income terms of trade. The response of rural investment depends upon the expected returns on investment. What, in addition to unfavourable terms of trade, would keep the rural investment low? As we have already discussed, the state of infrastructure is one factor; an area endowed with a good network of irrigation, roads and power will yield high returns to agricultural investment. Along with public goods like roads and canals, agricultural and agro-processing activities may require producer services (typically, privately operated) like transport, repairs, storage etc. Most importantly, rural entrepreneurs must be free to take advantage of profitable opportunities. A major thrust of our argument in this paper will be that reforms are needed to remove regulations that are presently inhibiting the entrepreneurial activity. We have to understand the anatomy of a rural growth process before we can express a judgment on what measures should economic reforms include to generate a healthy response in rural India. It is clear, however, that it is not sufficient to eliminate the net tax on farmers.

Let us move, therefore, to a discussion of a process of rural growth that we believe is feasible in many regions of India.

SECTION 3

Successful Rural Growth Episodes

(a) The Case of Punjab

Rural transformation in Punjab following the introduction of high yielding variety seeds is one of the most thoroughly researched recent rural growth episodes in development. While the initial endowments (climate, culture, structure, and irrigational investment during the British regime) were favourable to a spread of agricultural productivity growth in 1960's and 1970's, what sparked off the Green Revolution was the simultaneous introduction of the new technology package (seeds and fertilizer), public investment (roads, power, irrigation and extension) and an increase in procurement prices. Farmers responded to the profitable opportunities rendered feasible by the new found access to technology, markets and inputs. Private investment, especially in tube-wells, grew rapidly. The new technology diffused through the countryside resulting in a rise in yields, first in wheat and then in rice. At the same time, the investment in roads developed better contacts with the marketing and industrial centres. As a result, agricultural development through its backward and forward linkages created additional incomes and employment opportunities in non-agricultural activities.

Regarding backward linkages, Chadha (1986) points out:

> "The relative share of purchased inputs increased sharply from 30 percent in 1960-61 to 85 percent in 1980-81. Clearly, agriculture in Punjab was getting increasingly linked with non-agricultural sectors for the supply of its inputs. This created possibilities of expansion for such activities, both locally and outside the state. While the increasing demand for irrigation equipment, implements and machines, electricity, repairs and services, etc., was met very largely through local expansion, the increasing demand for diesel oil, pesticides, and partly of chemical fertilizers, etc., necessitated 'imports' from outside the state." (p. 124).

In addition, forward linkages were forged through the marketing of agricultural produce.

Chadha (1986) writes:

> ".....during 1971-81, ...the transport and marketing of expanding agricultural surpluses generated a number of ter-

> tiary activities and employment in semi-urban and urban marketing centres; the rising pace of construction activities in market centres and elsewhere were yet other sources of employment outside the rural areas." (p.49)

The growth of urban settlements for marketing as well as the supply of input services meant that people in rural areas began to have easier access to several services. Chadha notes:

> ".....in Punjab, it is relatively easier to avail of banking facilities, veterinary assistance, machinery repair services, and so on, which are located in nearby towns. In fact, the locale of many rural activities has shifted to urban centres, and a visit to these centres is a routine matter for farmers. In short, because of the development of village link roads and the consequent shortening of rural-urban time-distances, one commonly observes a semi-urbanized rural pattern in Punjab. The diversified occupational structure, commuting for work and education, orientation towards and participation in a wider society and economy outside the local village community, and so on, are indicative of city-like features of rural life in Punjab today." (p.35)

An outcome of these developments was that the share of tertiary sector activities such as construction, trade and commerce, transport, storage and communication in the total rural as well as urban employment went up dramatically between 1961 and 1981. (Chadha (1986), Appendix Table 2.4). In fact, what sustained an increase in real wages in Punjab despite growing mechanization of farm activities was an increase in off-farm employment in agro-based industry (e.g., dairy, poultry), services (e.g., repair, construction, storage, transportation) and manufacturing. The diversification of the rural economy had positive impacts on agriculture as well. Chadha remarks:

> ".....close rural-urban proximity has led to regular contact with urban marketing and industrial centres, diversification of cropping patterns, greater operational efficiency of extension services and a continuous flow of technical information, modern inputs and materials into rural areas." (p. 35)

The general pattern we detect in the accounts of rural growth in Punjab is this: in an area with favourable conditions, a stimulus either in the form of enhanced price incentives or infrastructure or both arrives and triggers a switch to a more productive technology. The new technology

makes a greater use of purchased inputs and hence requires input services such as credit, distribution, transportation, storage, repair and construction. The higher level of agricultural activity also makes demands on marketing services. These services tend to locate in towns or service centres indicating some scale economies associated with them. Rural-urban links grow. Availability of these producer services enable farmers' access to a wider market and consequently to a wider range of production possibilities. Rural production becomes diversified. The demand for producer services further increases. As the supply for producer services responds to the increase in demand, the demand for labour in the provision of these services rises. The structure of employment changes; the share of non-farm employment in rural areas (including the supply towns) rises. The greater availability of producer services facilitates further diversification, and so on.

(b) The Case of South Gujarat

Punjab is by no means the only successful story of rural growth in India. The pattern of growth that Breman (1985) observed in Surat district in Gujarat has many common elements with that in Punjab. The district, an arid area, characterized by cotton framing under contracts with traders from Bombay and Ahmedabad had been relatively stagnant for a hundred years. Infrastructural as well as institutional developments were at a rather low level. First, canal irrigation (introduced 1953 and developed further in 1973) and then well-irrigation made possible by rural electrification started a dynamic process that transformed this area.

Technology as well as cropping pattern changed. Sugarcane displaced cotton as the main crop. In addition, rice, bananas, cotton and vegetables were also produced. As in Punjab, the greater market orientation of farm production went hand-in-hand with more rural-urban contacts. Breman describes the present scene as follows:

> "A busy traffic dominates the roads; fully laden lorries and tractors with trailers bringing agricultural produce to the collection points for transport or processing, trains of carts carrying sugar to the factories, crowded and frequent buses which have made both countryside and city more accessible, and finally the collection of cycles, scooters, engines and private cars which emphasize the mobility permitted by modern communications. The backdrop to this lively scene is the intensively cultivated fields and the water, implements

> and field labor in evidence there nearly the whole year round." (p. 24)

The rural economy became more diversified as activities sprung up to satisfy rural demand as well as to process crop produce. Taluka towns like Bardoli, Palsana as well as smaller towns like Madhi, Valod, and Sarbhon became industrial centres providing producer services to rural areas. In Breman's words:

> "Development of the physical infrastructure in the district has given a strong impulse to the construction industry, the raw materials for which are also found on the spot. Many brick fields have sprung up along the river near Bardoli, and several quarries and stone crushing yards are operating close to Valod. In Bardoli a large roof tile manufactory has also been established and a cement factory making pipes, etc. Demand for these products — used as much in construction of roads and irrigation canals as in utilities and house building — has risen enormously. Motorization of traffic and mechanization in agriculture have led not only to an increase in technical know-how but also to the opening of workshops for maintenance and repair in the busiest centres." (p. 45)

As in Punjab, the dynamics of rural growth described by Breman emphasizes the role played by urban-rural linkages and the further diversification that town based services fostered. The main focus of Breman's work is the increased polarization that such a development led to. The rural growth did increase labor demand substantially but instead of employing the local labor in the newly created jobs the employers preferred to hire migrants. The explanation for such a curious behaviour is based on the ethnography of the area and is not relevant to our concerns. For us, what is relevant is that this pattern of growth did create a substantial increase in labor demand in the supporting services.

(c) The Case of North Arcot District in Tamil Nadu

The accounts of the growth process in Punjab and South Gujarat are suggestive about the spatial aspects of development. The new technologies and new crops required new kinds of input distribution, produce marketing and processing services which, in turn, stimulated the emergence of market towns and urban settlements. The changes in the geography of

rural services that occurred in the six eastern talukas of North Arcot district of Tamil Nadu have been examined by Wanmali (1991) and Wanmali and Islam (1995). In the 1970s, this area experienced successful technological change which transformed the agricultural production system from one based on traditional varieties, to one based on high yielding varieties of paddy.

The papers cited above studies the changes in the provision of 134 types of rural services that occurred in 534 villages and towns during the periods 1973-83 and 1983-91. Besides consumption services such as education and health, these studies also tracked a number of services which are used for consumption and production (such as retail services, transport, postal services and banking) as well as services which are exclusively used in production (such as agricultural input services for purchase, hire and maintenance, and marketing services). To quantify the services available at a settlement, the method in these papers is to assign each service a weight and then to add up all the provided services so as to arrive at a "centrality score". The weights are determined by the population threshold levels which triggers the supply of a service. Services which appear in small sized settlements receive a lower weight than services which exist only in large settlements. The table below reports the changes in the distribution of settlements according to their score of service provision.

TABLE 1

Score Group	*Percentage of number of settlements*		
	1973	1983	1991
40	78.69	62.43	37.50
40-70	16.64	31.59	29.36
70-100	2.80	2.80	14.39
100-130	0.37	1.68	5.49
130	1.50	1.50	13.26

Source: Wanmali (1991) and Wanmali and Islam (1995)

It can be seen that the distribution has changed in favour of settlements that provide more services. The availability of more services at more places means that households have better access to services. This can be verified directly in Table 2 which displays the change in distances travelled to obtain a service between 1973 and 1983. This data was computed on the basis of a survey of 345 households in 11 villages (Wanmali, 1991).

TABLE 2 Mean Distances by Service Category

	Distance (km)	
Service Category	1973	1983
Education	8.88	4.47
Health	15.62	12.61
Communication	5.18	4.24
Banking	7.56	8.34
Transport	10.8	10.15
Ag. Inputs	10.21	7.33
Animal Husbandry	4.69	4.90
Marketing	16.75	9.22
Retail	11.9	7.59

Source: Wanmali (1991)

The North Arcot studies highlight the spatial spread of services that accompany regional development.[7] Wanmali and Islam (1995) sum up the changes in the following words:

> ".....an improvement in the availability of services,...has been observed across all sizes of settlements over time. Notably, there has been a tremendous improvement in the capacity of larger villages and small towns to provide these services. In addition, more sophisticated services are increasingly available within the study areas, though only in a few settlements, obviating the need to go 'outside' the region for these services." (p. 164).

SECTION 4

A Process of Rural Growth

We see the salient features of the above case studies as follow: (i) The arrival of an external stimulus made some new activities (new crops or new technology for old crops) relatively more profitable than old activities. Often, this stimulus was either in the form of public investment (e.g., irrigation) or a price incentive, or both. (ii) New activities required more purchased inputs (e.g., fertilizers, mechanical implements) which, in turn, required more services (e.g., transportation, retail service, credit, repair service, storage, construction etc.). (iii) New activities were more readily adopted in the neighbourhood of urban centres where the required services were available. The cost of using these services increases with the distance from a service centre. (iv) Wherever the

appropriate services were available, the spectrum of production activities grew and the local economy became more diversified. (v) In response to growing demand, more producer services evolved in the private and public sector. The greater proximity of service centres decreased the cost of using these services. As a result, rural-urban links strengthened and the new activities were adopted on a wider scale. (vi) Employment increased in the area and with its the regional income. Non-farm sector (including the service sector) played a significant role in creating employment. (vii) The growth in regional income created additional demand for producer and consumer services. Growth in local provision of services also meant that there was greater competition. Prices fell adding to the profitability of new service using activities.

The pattern suggests that productivity growth is associated with two distinct but related sub-processes: (i) ever increasing diversification of the economy, and (ii) rural transformation through spatial diffusion of new activities. The availability of producer services play a big role in both of them. Diversification increases factor productivity because it allows factor owners to use their factors in a new activity which offers higher returns than the old activity; this, in turn, occurs because factors vary in their characteristics and the new activity allows an owner to find a better fit (of activity to the factors of production) so as to improve the gains from trade over those yielded by the old activity. In a subsistence economy with little opportunities for trade with the outside world, the main production activities are geared toward basic necessities such as foodgrain production. All land and most labor will be used for foodgrain production. Trade with more developed areas allows diversification but such a trade may not be feasible without the availability of certain producer services; the local climate may be suitable for growing grapes but unless it is possible to transport them to a city market in a refrigerated truck, the activity would yield no returns. A spread of different service activities, in turn, generate opportunities for sons and daughters of farmers to find a niche for their muti-faceted abilities.

As land is an essential input in the agricultural production process, producer services cannot be utilized by agriculture locating itself in a city or urban area where such facilities are already available. Rather, new activities can be adopted only when producer services migrate to the rural hinterland. Setting up a firm providing a producer service, however, is not costless. The presence of set-up costs create scale-economies and that is why such firms cannot be atomistic in size and locate themselves wherever there is demand for their services. Moreover, the users of these services often tend to need a whole set of them. Whatever considerations induce one firm to locate in a given area also induce other firms to locate in the same area. The cluster of

such service firms emerges as an urban centre and benefits the rural area around it by facilitating its diversification.[8] The spatial aspects of this process become important because of the scale economies in the provision of producer services.[9]

Imagine a rural area situated around an urban centre. The urban centre has various producer services such as transportation, storage, construction, repair, retail, and credit institutions. The cost of using these services increases with the distance from the centre. The cost of transporting consumer goods to and from rural areas is negligible by comparison and we shall assume it to be zero. Suppose initially the rural area is engaged in a production activity which does not use any of the services that are available only in the urban centre. It is not as if new activities (or new technologies) are not available but with the prevailing output prices, the state of infrastructure, and the prices of producer services, new activities are less profitable than traditional activities. New activities, though more productive, require the use of producer services (either because the technology requires purchased inputs or because they need packaging or processing before the product could be sold for a profit). Suppose each unit of output produced by using new activity (or technology) requires one unit of producer service. Clearly then, unless the price of output is at least as great as the price of producer service, the new activity cannot be profitable. Suppose also that if prices are such that the new activity is profitable, then the profits associated with it increase more steeply with respect to the output price than the profits associated with the old activity.

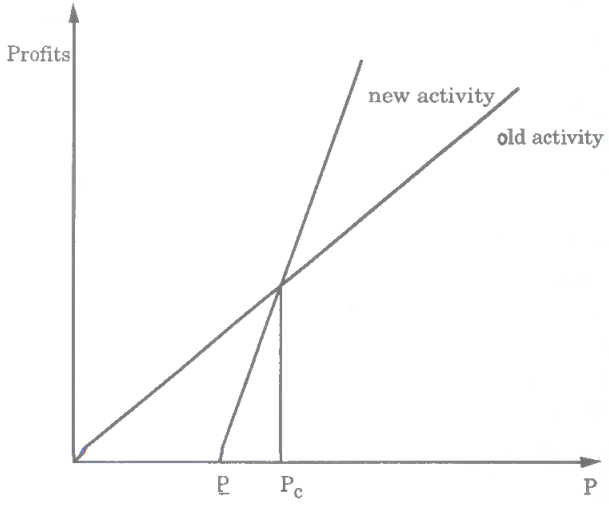

FIGURE 1

Figure 1 shows how at all prices below P_c the old activity is profitable, while at all prices above P_c, the new activity is profitable. The intercept on the price axis ($\underline{P}$) represents the price of producer service. If the producer service becomes cheaper, the profit line for the new activity moves to the left and consequently, P_c decreases. Thus, the cheaper are the producer services, the greater is the range of prices over which the new activity is more profitable than the old. If the productivity of new technology increases because of public investment or an innovation, the profit line of new technology becomes steeper once again moving P_c to the left and increasing the range of prices over which the new technology is more profitable.

From Figure 1, we can thus see how an external stimulus either in the form of an increase in the output price P or a cost-reducing public investment can bring about a switch from the old to the new activity. Such a switch will take place within a certain distance from the urban centre Beyond that, the higher costs of fetching the producer service makes the new activity prohibitively expensive. As the new activity replaces the old activity, the demand for the producer service increases. An important link in the process is how the supply of producer services responds to the increased demand. It is realistic to regard the producer service sector as a monopolistically competitive one. An increase in demand for producer services induces the supply of producer services at a location away from the urban centre but inside the rural area where new activities have been adopted. Compared to the urban centre, the new service centre is closer to many farmers within the region of adoption as well as to some farmers outside it. The cost of accessing producer services falls and therefore, the area within which the new activity is more profitable expands. The demand for producer services increases even further and it is possible to imagine that this makes yet another service centre viable in the countryside thereby bringing the privilege of access to producer services still closer to villages in the hinterland. This, in turn, creates possibilities for the adoption of new technology by more farmers in the hinterland. In response to the increased demand, suppliers of producer services move deeper into the hinterland which keeps the process of spatial diffusion going.

The initial stimulus to adopt the new activity can thus set in motion a sequence of events resulting in a diffusion of new technology starting in the neighbourhood of an urban centre and diffusing outward toward the hinterland. Whether the process of spatial diffusion will, in fact, be set off and how far it travels will depend upon many factors: the strength of the initial stimulus, the transportation costs associated with accessing producer services at a point distant from an urban centre, and the flexibility with

which suppliers of services can respond to market demands. If economic reforms of agricultural sector will influence these factors, they will determine the effectiveness of this process of rural growth.

Since the infrastructural development across different states vary, it is clear that the supply response will vary across the country. Perhaps, we should expect that the developed states will reap greater benefits from trade liberalization. But, on the other hand, the gap between the potential and the actual productivity is higher in less developed states. The rate of growth of output in the eastern states is presently higher than the national average. It is difficult to predict a pattern of regional distribution of productivity growth across the country but the states (or districts) very poorly endowed with infrastructure may be left out of the growth process.

So far we have talked in terms of a switch between one old activity and one new activity. One can, however, imagine an entire array of new activities ranked according to the intensity as well as the extent to which they use producer services. As new markets open up, production possibilities expand and a whole series of new products and activities become viable options. Once again whether or not a farmer or a rural entrepreneur finds an activity profitable will depend on what all producer services are required for the particular activity and how much the required bundle of producer services costs at that location. By making available a new producer service at a reasonable cost, the adoption of one activity can reduce the cost of a package of producer service bundle needed for the production of another activity with even a higher value added. Just as the adoption of a new activity in the neighbourhood of an urban centre brings closer the possibility of adoption of that activity beyond that neighbourhood, the adoption of an activity in any area brings closer the possibility of adoption of an even more lucrative activity (i.e., greater value added) in that area. How far this process can progress and how rapidly it will flow will depend once again on the flexibility with which the local entrepreneurs can take advantage of profitable opportunities.

The key element of the process of rural growth described above is the circularity between the cost of producer services and a change in the choice of production activity. More lucrative (higher factor returns) activities demand more producer services; the absence or high cost of these services was the reason for their (i.e., new activities) infeasibility in the past. The greater the supply of producer services, more feasible is the next activity along the scale of factor returns. The process can thus proceed along two dimensions: (i) a spatial diffusion of a switch from an old activity to a new activity that yields higher factor returns, and (ii) a movement up the

ladder of production activities in the ascending order of factor returns through two, three or more activities at any given location.

If some producer services are supplied by agencies of the government, would the rural growth process still consist of spatial diffusion as we have sketched it? After all, it might be argued, that the government need not wait for the demand for producer services to emerge in the hinterland in order to supply such services. Instead it could short-circuit the process by investing in service centres and thereby induce producers to switch over to new activities. Such a reasoning, however, disregards the fact that public investible resources are limited. This may lead government agencies to allocate resources in favour of areas where the resources are likely to be more productive even though the government's goals may be very different from an individual's objectives. According to Wanmali and Islam (1995), regional development policies have been explicitly formulated on the basis of providing government services to regions which posses certain advantages such as assured irrigation facilities and diversified cropping pattern.[10] We may, therefore, observe a spatial diffusion process in publicly provided services similar to the spatial patterns in private services. In this context, the results from Wanmali's (1987) study of the development of rural services in Miryalguda Taluka, Andhra Pradesh are particularly interesting. Wanmali examines the changes that occurred as a result of an irrigation system that came into being in some parts of the taluka around 1968. The dry and irrigated tracts had roughly the same level of government services in 1968. But by 1978, the irrigated tracts were far ahead in private as well as publicly provided services. Indeed, some government services such as animal husbandry, primary credit societies, rural banks and regulated market yards were available in the irrigated tract only.

In the description of the growth process, we talked about "more lucrative" activities or activities yielding higher "factor returns" without distinguishing between returns to different factors. In agriculture, the decision to switch to a new production activity is typically made by a landowner and not by laborers. Theoretically, there is nothing in the process described above which precludes a landowner from switching to an activity that uses less labour and yet increases the returns to his landholding. Empirically, while it does seem that some labour is being displaced by technical change, especially in the advanced regions, real wages in agriculture have grown steadily and poverty has declined because of rapid rise in rural non-farm employment directly due to the success in agricultural transformation (Bhalla, 1993).[11] In what follows, therefore, we will

focus on the possible impediments to the growth process and the specific reform measures that could remove them.

SECTION 5

Reforms: Removing Impediments to the Rural Growth Process

The preceding section sketched out a rural growth process, the elements of which were common to many of the successful episodes of regional development in India. As we see it, the design of economic policy ought to be such that it is supportive of this growth process. The changes from the existing framework of policies that are required to remove possible impediments to rural growth constitute, in our view, the desired set of agricultural sector reforms.

The proposition that there are serious regulatory impediments in agriculture is far from self-evident. Indeed, it is sometimes argued that the agricultural sector in India does not offer as many opportunities for reform as the industrial or financial sectors since production in this sector has remained in private hands and been exempt from direct controls (Vaidyanathan, 1996). For perhaps the same reason, much of the debate about agricultural sector reforms has concentrated on the proper pricing of inputs and outputs and whether they should be equated with world prices. Our view, on the other hand, is entirely conditioned by how economic policies impinge on the dynamics of the rural growth process.[12] Trade policy is one way in which the regulatory environment may matter to the rural growth process; more generally, economic regulations in agriculture have been directed not at controlling production but rather at the marketing and processing of agricultural produce. In this section, therefore, we will focus on whether these regulations have facilitated or hindered the process of rural growth. For the purpose of discussion, however, it is convenient to disentangle government interventions on external trade from regulations on domestic trade and processing.

External Trade

The pre-1991 position was that except for long established export crops like tea, jute and spices the volume of trade for all agricultural commodities was governed by quantitative restrictions. The trade quotas were either handed out as licenses to private agents or as was more common, they

were directly administered by state trading agencies (parastatals). The import and export quotas were contingent on the government view about the supply-demand balance in the domestic markets. They were, therefore, frequently revised in order to strike a balance between consumer and producer interests. Subject as they were to persistent lobbying, these decisions were a cause of uncertainty for trade and markets.

In the last three years, however, quantitative restrictions have been lifted on some commodities. The most significant of these changes have been the removal of export controls on all varieties of rice. On the import side, quotas were abolished for the import of edible oils, cotton and sugar.[13] In addition, the monopoly of state agencies in the import of edible oils and cotton were withdrawn.

Export controls, however, remain in force for other major commodities such as wheat and cotton. The obvious effect of these quotas, if they are binding, is that they limit the prices received by farmers. Such price controls reduce the profitability of adopting more productive new techniques and thereby damage the rural growth process. Less obviously, farmers may not even receive the higher prices due to the extent of the quota. This possibility comes about because of the way in which export quotas are administered. In principle, export quotas are supposed to be announced at the beginning of the crop marketing season which is then valid for the entire length of the marketing year. Exporters, therefore, do not enter into commitments which overlap different seasons. However, in practice, the government does not announce the aggregate quota for the year but staggers such decisions over a season and may even modify a previous announcement. As a result, prices at the harvesting stage, when most farmers sell their output, are largely determined by guesswork about future government actions.

For instance, cotton growers this year complained about low prices due to a delay in the announcement of export quotas. Although October is the official beginning of the marketing year, the first announcement of the quota was as late as September 25, 1996. The unexpectedly low level of quota (1.50 lakh bales of Bengal deshi cotton) depressed the market, until the government announced an additional quota (of 3.45 lakh bales of staple cotton) on October 9, 1996. Unless private trade is very good at predicting government actions, the costs of government induced uncertainty will be passed on to growers in terms of lower prices.[14]

The difficulty of correctly anticipating government decisions is one problem; a deeper issue is the credibility of government policies itself since sudden shifts in policy, often amounting to reversal, are not uncommon. As a case in point, the export quota for wheat was first fixed at 2.5 million

tonnes for 1996-97. Within a few months, however, the ceiling was lowered to 1 million tonnes. An even more dramatic shift occurred in the policy towards exports of wheat products. In 1995, all quantitative restrictions were removed in what seemed to be a well-considered policy change. But free exports have been stopped from October 1, 1996 and are now subject to a ceiling of 1.50 lakh tonnes for the period from October 1996 to March 1997. These actions for which no insurance or compensation is available greatly increase the perils of exporters.

It thus seems that while the government seeks greater involvement of private trade in exports and imports, it does so within the framework of existing policies where the government reserves the right to periodically revise the terms of such involvement. This may have as big an inhibiting effect on agricultural markets as quantitative restrictions.

Regulations on Domestic Trade and Processing

Broadly speaking, we can distinguish between two types of regulatory impediments: (i) regulations that reduce the profitability of adoption of new activities by controls on prices of agricultural products, and (ii) regulations that increase the cost of supplying producer services.

Measures that are aimed at depressing agricultural prices are usually employed to assist state trading agencies to procure the commodity as cheaply as possible. Such procurement methods include the levy system in sugar and rice where a portion of output is purchased at a low levy price, monopoly procurement schemes where purchase is a monopoly of a state agency (such as the cotton scheme in Maharahstra where such an arrangement has recently been extended to 1998) and curbs on movement of commodities which keeps low the agricultural prices in the producing regions. The last method of procurement has been officially forsaken by the Central government but is still widely used by State governments.

A necessary condition for successful rural growth is an efficient marketing and processing system in rural areas. Unless there is adequate supporting infrastructure (e.g., roads, telecommunication, port facilities) and a network of producer services (e.g., transportation, packaging, refrigeration, repair service and credit) so that market opportunities (thrown up by technological change or trade liberalization) can be perceived and responded to in a timely manner, they will bypass rural producers. Similarly, some of the agro-products require some minimum amount of processing before they can be shipped out. Presently, however, marketing and processing margins are very high in India (World Bank, 1996), and as long as this con-

tinues to be the case, the rural growth process will be limited in its scope and impact.

Suppose, for instance, there is a market opportunity to export 1 million kilograms of tomatoes if they can be sold at $2 a kilogram (f.o.b. price). Suppose also the production cost per kilogram of raw tomatoes is $1 under the present technology but could be reduced by $0.5 by investing a new technology. If the cost of marketing and processing is $1.50 per kilogram, no investment will take place. If, on the other hand, the marketing and processing cost is only $1 per kilogram, a fixed investment of sizable size would still earn high returns. Clearly, the marketing and processing margins will determine the size of the opportunity set for new activities. The success of the rural growth process in which there are successive changes to new activities depends on there being a large size of opportunity set for new activities.

Several regulations in India have had the effect of increasing marketing and processing costs. Firstly, traders and processors are not allowed to hold more than a certain amount of inventories by the Essential Commodities Act. Stocks are consequently dispersed and held in amounts that are insufficient to reap benefits due to economies of scale. Besides its effect on current trading costs, the provisions of the Essential Commodities Act have discouraged private investment in modern and more efficient methods of storage. Secondly, the government, through the Reserve Bank of India, intentionally increases the cost of stockholding by the use of Selective Credit Controls. The objective of this policy, which consists of minimum margin requirements and commodity specific interest rates, is to restrict credit for the purpose of commodity storage. Thirdly, risk premiums as a component of marketing and processing margins are higher than necessary because of the ban on futures trading. Finally, large-scale plants have not been allowed to operate in much of the processing industry such as in rice milling, oil extraction, and poultry feed manufacturing as these sectors are reserved for small-scale industrial units. Consequently, the processing industry in India has not been able to take advantage of scale economies presented by modern technologies and is inefficient relative to international norms. On the other hand, where small-scale reservation policies have not been applied, growers have benefited from efficient processing facilities. This is illustrated by the rising share of non-traditional oilseeds such as sunflowers and soybeans in total oilseed production. As observers have noted, the processing of these two crops have been exempt from small-scale reservation policies, enabling the establishment of large-scale processing plants.

Although we have separated the discussion on external trade policies

from domestic market regulations, policies in one sector have a bearing on the success of reforms in the other sector. Hence opening up to world markets may not appreciably increase the prices received by growers unless trading and processing costs are low. For instance, if exporters cannot hedge their risks on export commitments, selling in world markets would not be attractive to them. Access to world markets would also increase the premium on quality. Whether Indian exporters and growers can take advantage of it would depend on the quality of producer services in supplying inputs and post-harvest services including storage and transportation. Conversely, reforms in external trade policies are also essential to sustain efficient, well-functioning domestic markets. Futures markets in a commodity subject to trade quotas (such as cotton) cannot function if the government feels free to reverse policies. Further, when the government intervenes it must do so in a disciplined, transparent and consistent manner for otherwise insider trading will wreck the market.

Our case that impediments to private trading activities be removed is based on our belief that poverty in India cannot be tackled without unleashing a process of rural growth which involves access to markets, diversification of rural activities and urban-rural linkages. The success or even the feasibility of the process depends on the degrees of freedom available to rural entrepreneurs to take advantage of market-based opportunities along with publicly supplied infrastructure and privately supplied producer services. But would giving a free reign to private traders not also unleash the spectre of price gauging? Indeed, the whole justification for the existing system of regulations on private trading is nothing but the belief that, if given a free reign, traders would exploit consumers. This belief is not entirely unfounded; Indian literature is replete with descriptions of mercenary and exploitative behaviour of rural traders-cum-moneylenders. How can we then justify deregulating private trade in rural India? 'Exploitative behaviour', such as charging exorbitant interest rates for loans or hoarding grain to manipulate the market, is possible only when the money-lender or trader has a local monopoly. Moreover, the use of one's capital for the purpose of moneylending or grain-hoarding is a possibility only if there exists no other use of the capital that offers higher returns. Would such 'exploitative behaviour' be less likely today than it was in the past? We believe that the answer is 'yes'. Local monopolies exist because someone who has access to local information also has a monopolized access to credit. Development of credit markets, if it widens the access to credit, enables another individual who is also in a position to have local information to compete with the local monopolist. A rural growth process with widening

access to markets and producer services (including credit) is less conducive to the growth of local monopolies who can maintain exploitative behaviour for very long. Moreover, it is likely that the expected returns from the use of capital in new productive activities are higher than in activities such as moneylending and hoarding. It is wrong therefore to extrapolate the behaviour of the rural rich in a stagnant economy of the past to a future that offers widening entrepreneurial opportunities.

The provisions of the Essential Commodities Act and other restrictions on private trading and storage can be regarded as over-insurance that is nipping in the bud any potential for rural growth and blocking the most promising way to reduce poverty in India.

SECTION 6

Political Feasibility of Reforms

Let us summarize the arguments we have presented in this paper and then reflect on their political feasibility. We have postulated that a certain kind of rural growth process based on outside market opportunities, urban-rural linkages through the use of producer services and diffusion of new activities and technologies is most likely to succeed in rural India. A stimulus for growth can arrive in the form of new market opportunities (signaled by a relative price shift in favor of new activities) or in the form of productivity enhancing public investment making feasible activities profitable. The decline of public investment in Indian agriculture over the last 15 years is ominous, and if this trend continues, it may seriously hamper the prospects of the envisioned rural growth process from taking off. In fact, if the possibility of tapping lucrative market opportunities is dependent on infrastructure such as irrigation, roads and extension services, farmers' lobbies will clamour for greater public investment.

We have also argued that the mechanics of the envisioned growth process requires that the opportunity set for new and more profitable activities remain as wide as possible, and any artificial constraints on the profitability of farmers such as export controls, inter-zonal controls and monopoly procurement schemes are detrimental to the process. Similarly, successful response to market opportunities requires maximum flexibility and low cost marketing and processing of agricultural produce. We have argued that no successful response to market opportunities is possible unless private trading in agricultural commodities is deregulated.

Are the policy conclusions based on these theoretical arguments politically feasible? It is sometimes argued that a shift in the terms of trade towards agriculture is difficult because of resistance by well-organized urban groups who are loathe to give up their access to subsidised foodgrains. In India, the public distribution system which retails grain at below market prices is important in urban markets (and also in the rural areas of some states). Yet, in the years that it was in office, the Narasimha Rao government raised the issue price (i.e., the price in the public distribution system) of foodgrains three times between 1991 and 1996. The price of rice increased by 85% (Rs. 289 per quintal to Rs. 537 per quintal for the common variety) while the increase was about 71% for wheat (Rs. 234 per quintal to Rs. 402 per quintal). On the other hand, all these changes occurred within the first 3 years of the government's term; the issue prices have not been changed since February 1994. Clearly then, fear of popular unrest matters at some times but not at all times.

Possibly a more enduring political obstacle to economic reforms comes from the fact that an increase in foodgrain prices would hurt the poor especially in the short run. It is imperative, therefore, that an effective safety net is in place. But is this politically feasible? In the official view, the Public Distribution System (PDS) continues to be the principal instrument for protecting the consumption of the poor especially against short-term fluctuations in prices.[15] On the other hand, there is overwhelming evidence that the PDS does not actually reach the poor. Firstly, its coverage of the poor is limited (Jha, 1992). Secondly, even for those poor with access, the market rather than the PDS is the dominant source of supply (Dev and Suryanarayana, 1991). Thirdly, even for those poor who buy largely from the PDS, the income support provided by the grain subsidy is small (Parikh, 1994).

Could the PDS be reformed to be an effective safety net? Firstly, resources are a genuine constraint to the expansion of the PDS. The food subsidy of the Central Government currently accounts for about 6% of Central Government revenues. The food subsidy is the difference between the Food Corporation of India's (FCI) cost of grain procurement and distribution and the issue price. Although the procurement price is below the issue price, the margin has not been enough to cover the costs of distribution (including storage). It is well documented that FCI's distribution costs have been well above the costs of private handlers (for instance, see Shah, 1993). Improving the efficiency of the FCI would therefore release resources for increasing the consumer subsidy. Indeed, a recent study suggests that without a reform of the FCI and the ration shop network, the level of food subsidy would always be too high to permit an expansion of the PDS.

Balakrishnan and Ramaswami (1996) have shown that consumers perceive grain from private retail outlets to be of higher quality than the grain available at the ration shops even though the government does not set out to supply lower quality grain. The appearance of quality differentials at the retail outlets is due to a combination of inefficiencies in the PDS marketing chain, such as bad purchase decisions, lack of care in storage and handling, and indifferent service at the ration shops. Whatever the reason, the outcome is that whenever the government raises the issue price, PDS sales fall as consumers exit into the open market. The cost of holding unsold stocks means that food subsidy does not fall to the extent of the rise in issue price. Earlier, we alluded to the sharp increases in the issue prices for wheat and rice between the period 1991-94. Although these measures were motivated by the desire to contain the budgetary subsidy on food, the desired impact never materialised. Rather perversely, the food subsidy bill increased by almost 40% in real terms between 1990/91 and 1995/96. The clue to this increase is provided by the fact that as much as 60% of the food subsidy in 1994/95 went to finance either the buffer stock or measures to get rid of some of the stocks through sales on the open market and exports (World Bank, 1996). In sum, as long as consumers perceive quality differentials, the scope for reducing the food subsidy and directing the saved resources to enhancing the coverage of the poor will remain limited.[16]

The second way of making the PDS cost-effective in reaching the poor would be to ensure that access to it is confined to the poor. Targeting the PDS is widely accepted as an urgently needed reform. At the highest political circles, however, any measure to exclude the nonpoor has been stiffly opposed by state governments. The opposition is strongest in the so called 'deficit' states such as Kerala where the PDS represents a major source of supply and is therefore not an insignificant mechanism of transfer of central resources into the state.[17] At the policy level, the reform of the PDS has not been tied to agricultural trade liberalization.[18] If it were, a countervailing force consisting of the 'surplus' states, which presumably would be the immediate beneficiaries of agricultural reforms, might well have emerged pushing for better targeting as well as reform of the FCI. Nonetheless, as political events push India towards a more federal policy, regional conflicts about the future direction of agricultural and food policy may well rise to the surface.[19]

Analyzing the political support for agricultural reforms among farmers is more problematic than an analysis of the resistance to it by consumers. Although farmers constitute the natural constituency, their organizations have spoken in different voices. Sharad Joshi, the leader of Maharashtra

based Shetkari Sanghatana, has taken a stand that if all the impediments to farmers' entrepreneurial activities are done away with his organization would accept a removal of input subsidies and even income tax. But this stand is at variance with the position of other farmers' leaders like Tikait in the North India and Nanjudaswamy in Karnataka. These two leaders have, in fact, opposed trade liberalization. It is difficult to come up with a neat explanation of these differences across farmers' organizations.

An explanation, solely in terms of perceived economic gains and losses, could be constructed along the following lines. If trade is liberalized without an accompanying set of changes that include a substantial increase in public investment and a deregulation of internal trade in agriculture, farmers would not be able to benefit from new market opportunities. Thus, one reason why some farmer groups may not be enthusiastic for trade liberalization is that they may not expect either improvements in rural infrastructure or deregulation of trade. Indeed, this is a catch-22 situation. Trade liberalization will fail to benefit farmers unless there are some radical departures from the past policy; public investment in rural areas should increase, internal as well as external trade should be liberalized. But unless the subsidy burden is lightened and new sources of revenue are found, increases in public investment are unlikely. For farmers to give up input subsidies and support agricultural reforms, they have to believe that the appropriate policies will, in fact, be undertaken and the reforms will succeed.[20] The complexity of the political process may itself deter such a belief. The multiplicity of farmers' organizations and the absence of a single negotiating authority within the government may suggest to the farmer groups the futility of adopting a negotiating position wherein they agree to forego subsidies on water, power and fertilizer in return for sectoral reforms even when such a deal is very much in their interest.

Interestingly, it might have helped to have a binding commitment with an outside agency to impart credibility to a policy change in the eyes of domestic lobbies. For example, if the terms of the Uruguay Round agreements on GATT had required India to dismantle the subsidies to farmers, farmers' lobbies would have demanded greater public investment in agriculture and deregulation of rural trade. But, as it stands, India is classified as a country in which agriculture is not subsidized in the net and there is no pressure to lower the agricultural input subsidies.

One way out of the catch-22 situation might be the suggestion of Pursell and Gulati (1993) that reforms should begin with a "demonstration liberalization, i.e., the liberalization of an industry which is likely to have an early and readily apparent favourable, positive impact as regards output and

employment". In their opinion, the cotton industry would be an ideal candidate for such a trial run because of the potential of large increases in production and employment. Since the cotton trade is controlled by the textiles ministry rather than agriculture officials, it is difficult to say how politically feasible these suggestions are but some such measures seem indispensable to us. The Green Revolution was brought about by such selective approach; the Intensive Area Development Project maximized the success rate of experiments with new technology. Since cotton is grown mostly in the Deccan Plateau (Gujarat, Maharashtra and Karnataka) where the infra-structural development is already reasonable, deregulation by itself can trigger rural growth which in turn would help in garnering support for more broad-based sectoral reforms that are accompanied by a contraction in subsidies.

Some measures such as amendment of the Essential Commodities Act are politically feasible even over a short time horizon. Similarly, administrative changes such as transferring the control on cotton prices from the Textile Ministry to the Ministry of Agriculture are in the realm of political feasibility. It may be worth expending some political capital to bring about these changes. Cutting agricultural subsidies, on the other hand, will be resisted by farmers' lobbies at this point in time; without lowering the subsidy bill it is difficult to garner resources for an increased public investment. Yet, it is not impossible to reallocate priorities to some extent and to selectively increase the public investment by a small amount before the subsidy bill is lowered. Any positive response in agricultural incomes may help in lowering the resistance to the next round of policy changes which should come as a package of investment increases with reduced subsidies and partial rationalization of prices of water and power. Plan outlays by the Central government can be used as bargaining chips to induce state governments to rationalize their regulatory regimes. Such a strategy in bargaining with State governments can be successful only when a combination of deregulation and selective infrastructural outlays have demonstrably generated extra-ordinary income growth in an area. A patient but sustained step-by-step policy approach of this sort could gradually win agricultural lobbies to support reforms that would include gradual erosion of subsidies and rational pricing of inputs.

The political feasibility of reforms will also depend on whether the growth process induced by reforms can avoid, or, at least, limit environmentally or distributionally disastrous episodes. It is important to create a safety net and an appropriate environmental legislation before a large scale deregulation is carried out. Rural growth induced by reforms will generate successes as well as failures. The first few rounds of reform measures will

determine the political feasibility of the succeeding rounds. The sustainability of reforms will be determined, not by the initial successes, but by the initial failures.

SECTION 7

Lessons from China

Economics reform in China were initiated in the agricultural sector. The subsequent growth process owes much to the rural origins of policy change. Since China is the most outstanding success of market oriented reforms it is natural to ask whether the Chinese experience holds and lessons for reforms elsewhere. Our answer is that (a) the Chinese experience confirms the importance of producer services in the process of rural transformation and that (b) the process of agricultural reforms is incomplete and seems to be subject to political pressures that are easier to overcome than in India.

The initial reforms in China dismantled the agricultural collective and contracted management to the household economic unit under the household responsibility system. Success was immediate. But the rapid increases in grain output in the early 1980s created unanticipated problems for the State procurement agency which held a monopoly on grain purchases. By the end of 1984, total grain stocks had reached a level 50% above capacity. As much as 30 million tons were stored in open areas (Huang (1998)). In response, the government instituted a two-tier price system in 1985 according to which the State agency committed itself to purchases only up to a (mandatory) procurement quota beyond which farmers were free to sell surpluses on the market. While this relieved the State of the burden of excess stocks, it also ensured supplies in years of shortfall. The policy, however, opened up possibilities far beyond the satisfaction of the State's narrow objectives. Firstly, farmers were now free to respond, at the margin, to market determined prices for *not just* grain but for all goods and services that they could produce. Secondly, by abolishing the state monopoly on the purchase of grain, the policy established the basis for the legal existence of private markets. Farmers took advantage of these opportunities and established markets in cities, roadsides and rural towns. Many became middlemen and established transport services (Nee and Young (1991), Zhou (1996), Chapter 4). As a result, "the first 10 years of reform saw the rebirth of small towns, great increases in mobility and the rapid develop-

ment of the commerce and service sector" (Benziger, (1996)). Market access in turn, and the freedom granted by the two-tier price system led farmers to diversify into more profitable non-grain production activities such as herbs, fruits, vegetables, poultry and livestock.

The Chinese experience confirms the importance of producer services in the diversification of the rural economy. The revival of markets and marketing services carried the momentum from the initial reforms (of the organization of what was largely grain production) to all of agriculture (i.e., the non-grain sector) and indeed to the entire economy (through rural industry). The overall lesson from this story is that if the government had stopped reforms at the household responsibility system and not allowed private trade and marketing, the success of the reforms would have been short-lived. There would have been no channels for the flow of rural entrepreneurs.

The diversification of the rural non-farm economy has, however, happened in ways that are possibly unique to China. Firstly, unlike our sketch of the rural growth process, the producer services did not radiate from the city. This is because the producer services in the city were in the State sector and did not have the flexibility to respond to the demands in the courtryside. That the growth process did not abort was because of the farmers who set up marketing services, transport services and became the new traders. Yet distance to the city was important because that determined the profitability of the marketing activity. The city's role was that it provided the market for goods and services produced by farmers. Secondly, in response to the market reforms of the mid-1980s, the rural economy rapidly diversified into industry. Indeed, by the end of the 1980s, the entire range of private economic activity including construction, manufacturing, commerce, transport, handicrafts, repairs and other services were predominantly rural in composition and its basic units were the farm households (Nee and Young (1991), Zhou (1996)). The explanation for such a striking development lies as much in the success of rural entrepreneurs (who took advantage of their status as the first class of private economic agents in reformed China) as in the failure of reforms in the urban State industries.

The dynamism of the rural non-farm economy has, paradoxically, cast a shadow on further grain market reforms. Grain production since the mid-1980s has grown slowly and erratically with declines in output in several years as labor and other resources have moved out of grain production and moved into more profitable sectors in agriculture and non-agriculture (Huang (1998), Putterman (1992)). In 1992, the government abolished the urban grain rationing system and limited its purchases of grain

for the purpose of keeping reserves. Output shortfalls and large price increases in 1993 and 1994, however, persuaded the government to backtrack. Urban rationing coupons were reintroduced and procurement targets were again established (Huang (1998)). Putterman (1992) who predicted a stop-start reform cycle (where reformers gain strength in good times and lose in inflationary periods) suggests that the State's commitment to protect the real wages of urban workers of State enterprises is the long-run constraint to permanent market reforms. If Putterman is right and if it is primarily the urban constituency that the government cares about, then it also means, especially in relation to India's political economy, that it should not be difficult to devise a workable, accurately targeted and politically acceptable safety net.

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References

Ahluwalia, M. A. (1978), "Rural Poverty and Agricultural Performance in India", *Journal of Development Studies*, 14, p. 198-323.

Balakrishnan, P. and B. Ramaswami (1996), "The Quality of the Public Distribution System: Why it Matters", *Mimeo*, Indian Statistical Institute, New Delhi.

Baland, J. and A. Kotwal (1996), "The Political Economy of Underinvestment in Agriculture", *Journal of Development Economics*, (forthcoming).

Bates, R. (1981), *Markets and States in Tropical Africa*, Berkeley, CA: University of California Press.

Benzigar, V. (1996), "Urban Access and Rural Productivity Growth in Post-Mao China", *Economic Development and Cultural Change*, 44, 3, 539-570.

Bhalla, S. (1993), "The Dynamics of Wage Determination and Employment Generation in Indian Agriculture", *Indian Journal of Agricultural Economics*, 48, 3, pp. 448-470.

Binswanger, H. P., S. R. Khandker and M. R. Rosenzweig, (1993), "How Infrastructure and Financial Institutions affect Agricultural Output and Investment in India", *Journal of Development Economics*, 41, pp. 337-366.

Breman, J. (1985), *Of Peasants, Migrants and Paupers: Rural Labour Circulation and Capitalist Production in West India*, Oxford University Press, Delhi.

Ciccone, A. and K. Matsuyama (1993), "Efficient and Equilibrium Growth with Locally Increasing Aggregate Returns due to Input Demand Complemetarities",

Mimeo, (Department of Economics, Stanford University, Stanford, CA).
Chadha, G. (1986), *The State and Rural Economic Transformation: The Case of Punjab 1950-85*, Sage Publications, New Delhi.
Dev, S.M. and M. H. Suryanarayana (1991), "Is PDS Urban Biased and Pro-Rich: An Evaluation", *Economic and Political Weekly*, 26, 3537-3566.
Dreze, J. and A. Sen (1995), *India: Economic Development and Social Opportunity*, Oxford University Press: Delhi, New York.
Eswaran, M. and A. Kotwal (1994), *Why Poverty Persists in India*, Oxford University Press, New Delhi.
Fafchamps, M. and B. Helms (1996), "Local Demand, investment multipliers, and industrialization: Theory and application to the Guatemalan highlands", *Journal of Development Economics*, Vol. 49, pp. 61-92.
Huang, Y. (1998), *Agricultural Reform in China*, Cambridge University Press.
Joshi, S. (1986), *Bharat Speaks Out*, Bombay: Build Documentation Center.
Pursell, G. and A. Gulati (1993), *Liberalizing Indian Agriculture: An Agenda for Reform*, Policy Research Working Papers: Trade Policy Washington, D.C.: The World Bank.
Lipton, M. (1977), *Why Poor People Stay Poor: Urban Bias in World Development*, Cambridge, MA: Harvard University Press.
McGuirk, A. and Y. Mundlak (1991), "Incentives and Constraints in the Transformation of Punjab Agriculture", Research Report 87, International Food Policy Research Institute, Washington, D.C.
Mellor, J. and G. Desai (1986), *Agricultural Change and Rural Poverty Variations on a Theme by Dharm Narain,* Oxford University Press.
Nayyar, D. and A. Sen (1994), "International Trade and the Agricultural Sector in India", *Economic and Political Weekly,* May 14, pp. 1187-1203.
Nee, V. and F. W. Young (1991), "Peasant Entrepreneurs in 'China's "Second Economy": An Institutional Analysis", *Economic Development and Cultural Change*, 39, 2, 292-310.
Parikh, K. (1994), "Who Gets How Much from PDS - How Effectively Does it Reach the Poor", *Sarvekshana,* January-March 1994.
Putterman, L. (1992), "Dualism and Reforms in China", *Economic Development and Cultural Change*, 40, 3, 467-493.
Rao, H. and A. Gulati (1994), "Indian Agriculture: Emerging Perspectives and Policy Issues", *Economic and Political Weekly*, December 31, 1994, pp. A158-A169.
Ravallion, M. and G. Dutt (1995), "Growth, Wages and Poverty: Time Series Evidence for Rural India", *Mimeo*, World Bank, Washington, D.C.
Ravallion, M. and G. Dutt (1996), "How Important to India's Poor is the Sectoral Composition of Growth?" *World Bank Economic Review*, 10, pp. 1-26.
Rosenblatt, D., G. Purcell, A. Gupta and B. Blarel (1996), "Have Economy-Wide Reforms Helped Indian Agriculture", *World Bank*, Washington, D. C.
Schultz, T. (1980), *Distortion of Agricultural Incentives*, Bloomington: Indiana University Press.
Sen, A. (1996), "Economic Reforms, Employment and Poverty: Trends and Options", *Economic and Political Weekly*, Special Number, Vol. XXX1, Nos. 35, 36 and 37, pp. 2459-2478.
Vaidyanathan, A. (1996), "Agricultural Development: Imperatives of Institutional Reform", *Economic and Political Weekly*, Special Number, Vol. XXX1, Nos. 35, 36 and 37, pp. 2451-2458.
Varshney, Ashutosh (1995), *Democracy, Development, and the Countryside: Urban-Rural Struggles in India,* Cambridge (England); New York: Cambridge University Press.

Wanmali, S. (1987), *Geography of a Rural Service System in India*, New Delhi, B.R. Publishing.

Wanmali, S. (1991), "Changes in the Provision and Use of Services in the North Arcot Region, pp. 213-237, Chapter 10 in P.B.R. Hazell and C. Ramasamy, *Green Revolution Reconsidered: The Impact of High-Yielding Rice Varieties in South India*, Baltimore: Johns Hopkins University Press.

Wanmali, S. and Y. Islam (1995), "Rural Services, Rural Infrastructure and Regional Development in India", *The Geographical Journal*, Vol. 161, No. 2, pp. 149-166.

World Bank (1996), "India, Country Economic Memorandum", Washington, D. C.

Zhou, K. X., (1996) *How the Farmers Changed China*, Westview Press, Colorado.

Endnotes

1. In addition, the government undertakes expenditures on agricultural research, irrigation and rural infrastructure. The provision of these public goods is not, however, questioned by the logic of economic liberalization.
2. Thus, for instance, a 20% increase in the price level will cause the poverty ratio to increase by nearly 4.6 percentage points if the initial poverty ratio is about 40%. As may be expected, the effect on the severity of poverty, as measured by a poverty gap index, is larger.
3. It is also important to note that India is such a large producer as well as consumer of commodities that trade liberalization of its agricultural sector will change the international prices. The gap between the domestic and international prices of India's exportables (e.g., rice and cotton) may seem large now but it probably overstates the gains that would accrue to Indian farmers if they began to export without restraint. The promise of an export-led-growth through liberalization of agricultural sector, therefore, may not quite come to pass. This view has been forcefully argued by Nayyar and Sen (1994). The argument though, if correct, cuts both ways. It also means that the feared costs of trade liberalization in terms of a rise in foodgrain prices are also much exaggerated.
4. For an excellent account of a change in the political clout of farmers, see Varshney (1995).
5. The excessively low prices of electric power is resulting in excessive pumping of ground water reducing the water table and excessively low cost of water to farmers is causing misallocation of resources. Removing this irrational pricing should be an important part of reforms. See Rao and Gulati (1994) for some interesting suggestions for rationalizing the pricing system for these inputs.
6. For the period 1980/81 to 1986/87, Table I in Pursell and Gulati (1993) gives ESC (Effective Subsidy Coefficient) as either 0.97 or 1.07 depending upon whether the calculation of subsidy is with respect to operation and maintenance expenses only or it also includes the annualized cost of capital.
7. For other instances of this process, see Wanmali and Islam (1995).
8. There are a number of models in the literature which analyse productivity growth resulting from an ever greater indirectness in the production process or an ever increasing degree of specialization (Ciccone and Matsuyama (1996)). 'Diversification' and 'specialization of labor' are related and yet distinct. Diversification entails vertical division of an activity into sub-activities. Opening up of a market for a new product allows 'diversification' which, in tum, may or may not allow 'specialization'.
9. A recent paper by Fafchamps and Helms (1996) is akin to our model in this section. The stimulus to local growth in their model, however, is provided by

local income and hence consumption growth. But they conclude from a numerical simulation exercise that 'outside' rather than 'local' demand must play a dominant role.

10. For an econometric model, along these lines, of the provision of rural infrastructure in India, see Binswanger, Khandker and Rosenzweig (1993).
11. In a recent paper, Sen (1996) has questioned whether the increase in non-farm rural employment in regions other than Punjab and Haryana has much to do with agricultural growth. His hypothesis is that real wages rose because of government expenditures in rural areas which created non-farm employment. It seems doubtful, however, that an increase in real wages resulting from an increase in government expenditure can be sustained unless the government expenditure resulted in productivity growth.
12. Allocative efficiency issues are important but the arguments are familiar and have been analyzed extensively in the literature.
13. Owing to variety differences, cotton is exported as well as imported. As noted later, export controls continue to apply.
14. It is not just enough to be able to predict quota levels; timing is also important. In addition, the government may also change, without notice, the conditions under which the quotas are allocated to private agents. For instance, according to newspaper reports, the quota for Bengal deshi cotton remains undersubscribed this year because of a reduction in the shipment period during which the crop is supposed to be exported, (Economic Times, November 7, 1996).
15. Other anti-poverty programmes are the Jawahar Rozgar Yojana (JRY) which is a scheme of public works and the Integrated Rural Development Programme (IRDP) which provides subsided credit for the purchase of income earning assets.
16. Since quality differentials imply persistence of high levels of food subsidy, the government will be under pressure to increase the issue prices more frequently than necessary. As these increases will be transmitted to the open market prices as well, the bulk of the poor who anyway depend on the open market are also adversely affected by the lower quality of the PDS.
17. The most recent attempt to recast the PDS is the proposal to provide foodgrains to the poor at half the central issue price. It is estimated that this would result in an additional food subsidy of Rs. 3,500 crores, which is more than 60% of the current level of subsidy. The status of this scheme is still unclear as the state governments have opposed the plan of the central government that the scheme be financed by appropriate increases in the issue price on sales to the nonpoor.
18. This must be in part because the PDS is principally the responsibility of the civil supplies ministry while it is the agriculture ministry most concerned with agriculture sector reforms.
19. In a recent episode, the Punjab government exempted the common variety of paddy from levy. The Jammu and Kashmir government has protested to the Central government against this decision as the bulk of the state's rice requirement is met by the levy rice from Punjab. For more details, see Economic Times, New Delhi, 26 November 1996.
20. The reluctance to forego subsidies is surely reinforced by the poor management of public irrigation systems and state electricity boards. As Vaidyanathan (1996) notes, institutional reform in these enterprises is necessary for restoring efficiency to the input supply system. Removal of subsidies, by itself, would only pass the cost of inefficiency on to the farmers.