

Agricultural Links to Nonagricultural Growth: Urbanization, Employment, Poverty*

JOHN W. MELLOR

INTRODUCTION

It is a particular pleasure to give the Distinguished Lecture on the occasion of the meeting of the Pakistan Society of Development Economists. Pakistan is a country that has done well in economic development. It has built solidly on a base of success in its agricultural sector. Agriculture has played its role of stimulating the nonagricultural sector with a consequently vigorous small- and medium-scale non-agricultural sector, a disbursed pattern of urbanization, and growth in employment sufficient to allow gradual diminution in the incidence of rural poverty.

On an earlier occasion, I presented a series of lectures, published by the Society as a book, laying out the key elements of an agriculture-based high-employment strategy of growth. We then had occasion to discuss the pros and cons, the benefits, and the limitations of such a strategy, particularly in the context of Pakistan's history, achievements, and aspirations. Today, I will build on that base. First, very briefly, reminding you of the rudiments of the strategy, but then moving quickly on to deal with the employment-poverty relief aspects of the strategy and the implications to the pattern of urbanization. In doing so, I will dwell on the timely and difficult issues relating to the respective roles of the private and public sectors.

Precisely, because governments of developing countries have tended to neglect agriculture and rural development, and to overextend the public sector, we have had a backlash against a broad range of public sector activities which are essential to vigorous growth of the private sector and particularly antithetical to an agriculture-based, high-employment strategy of development. Along the way, I will deal with the quite different nature of the planning process in strategy that depends so heavily on a correct and efficient division of labour between the market place and the government.

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John W. Mellor is former Director, International Food Policy Research Institute, Washington, D.C., USA.

THE STRATEGY

For a low-income country with a large agricultural sector, the optimal development strategy accelerates growth in its massive, existing agricultural sector and transforms that growth into accelerated growth in employment of the large, low productivity rural labour force in increasingly productive nonagricultural employment. Such a strategy is conceptually simple. It has three critical components [Mellor (1966)].

First, factor productivity is raised in the agricultural sector, most usually by yield-increasing biological innovations, with a consequent major addition to net national income.

Second, the expenditure of that income stimulates growth in the high-income elastic components of agriculture, such as the livestock and horticultural sectors as well as in a wide range of nonagricultural goods and services, largely in the consumer goods sector.

Third, a feedback to agriculture from the activities stimulated by the agricultural growth raises the demand and hence maintains prices of agricultural goods experiencing accelerated technological change. As compared to the literature on economic growth of developing countries of a few decades ago, this strategy has two distinguishing features.

Most important, it relies heavily, as has been true of the economic history of all modern developed countries, on factor productivity increasing technological change as the basic engine of economic growth. Given the importance to western economic thought about growth of the theoretical work of Solow (1988) and the empirical work of Dennison (1962), one must wonder why technological change has played such a small role in the thinking about growth in developing countries. But, the reason is obvious. Such countries have been largely agricultural. For technological change to play a major role in growth of those countries, it has to occur substantially in the dominant agricultural sector. But, agriculture has been ill-understood, even by western development economists, and looked upon as a backward sector by development practitioners in developing countries. Failing to comprehend and pursue technological change in agriculture, the focus shifted to the industrial sector, and of course the large-scale, capital-intensive parts of the industrial sector, not the small-scale existing nonagricultural activities. With that focus, one thought in terms of expanding the capital stock as the engine of growth, adopting the existing technology of western countries.

The other distinguishing feature of an agriculture-based, high-employment strategy is the reliance on consumer goods expenditure as a stimulus to growth [Mellor (1976)]. At first glance, this may appear as a Keynesian point of view. However, a Keynesian expansion is based on unemployment of complete sets of

resources that are brought into production by increasing effective demand by a purely monetary expansion. In the context of the development strategy discussed here, we have two differences. First, the increased effective demand comes from a net increase in real national income, derived from increased factor productivity. As the expenditure of that income increases, the demand for goods and services produced in large part by low-income labour with a high marginal propensity to spend on food, the demand for food grows rapidly, with a consequent highly inflationary effect if it were not for the fact that the process started with an increase in that very food production. It is useful to remember that, while labour is in a sense of the term underemployed, the principle wage good (food) is not in surplus and therefore increased employment pushes up food prices; and, of course, conversely the most effective means of supporting food prices in the face of accelerated output growth is by increased employment. Thus, the focus is on effective demand, but in a context in which the real resource bottleneck to meeting that effective demand has been broken by factor productivity increasing technological change, specifically in agriculture.

In the past decade, the fashion in development economies has swung heavily away from forced draft industrialization through high savings and investment rates towards emphasis on effective demand generated from foreign sources – i.e., export-led growth and emphasis on market forces as the means of mobilizing and allocating resources for growth. An agriculture-led strategy differs in two respects from these positions.

First, while it emphasizes growth in effective demand as a major stimulus to growth, the source of increased effective demand is largely from domestic sources not foreign sources. This higher degree of internalization of the growth process has obvious advantages in times of concern with trade restrictionism, particularly in a context in which most developing countries rather than a tiny few might pursue such a strategy.

Second, while agriculture and the stimulated nonagricultural sector are small scale, private and hence necessarily market oriented; for those same reasons, they are highly dependent on the public sector fulfilling the need for critical complementary resources ranging from physical infrastructure and education to agricultural research and credit. The public sector has major critical tasks to perform which necessarily strain its capacity to raise resources and to deploy them effectively. Thus, while an agriculture-based, high-employment strategy is a highly private sector-oriented strategy, it places demands on the public sector which inevitably tax it to its limit. We will return to this difficult issue later.

Finally, while noting the greater emphasis on increased domestic demand rather than foreign demand as the stimulus to growth, trade has an important and critical role in an agriculture-based, high-employment strategy of development. A

major practical problem in achieving rapid growth is to achieve the theoretically sound position of spreading the capital stock and increments to the capital stock relatively evenly across the labour force. This is theoretically desirable in order to equate the marginal productivity of labour and capital at the margin in various uses, which in turn is most efficient in resource use and therefore represents the high growth path. It is, in practice, difficult to achieve this efficient allocation because of the relative fixity of factor proportions in many production processes. While, for example, textile production may have a wide range of choice of technique such that as average capital intensity rises the intensity of capital use in production can slowly increased; or a technique can be found to suit a wide range of capital labour availabilities. But, in steel production or petrochemical production, the range of choice is very limited.

However, consumption patterns demand a wide range of commodities with differing factor productivities and similarly the final product of production may use many different intermediate products of differing capital intensity. In fact, much of the final product of the nonagricultural sector offers potential for labour-intensive production, but the bulk of the intermediate products, such as steel, plastics, aluminium are very capital intensive. Put succinctly, in a closed economy, it is difficult to reduce average capital intensity. Trade offers the way out. Thus, in an agriculture-led strategy, the final demand composition favours labour-intensive production, but that presumes import of a large quantity of capital-intensive intermediate products. Thus, expanding trade is critical to the success of the process.

AGRICULTURE, EMPLOYMENT, AND POVERTY

The rapidity with which poverty has been reduced in association with rapid growth has been extraordinary, although little noted. The lack of note to the relation between growth, growth strategy, and poverty alleviation is unfortunate. It distracts attention from the central role of growth in poverty reduction and even more important distracts attention from the debate as to choice of development strategy as it affects poverty reduction.

Of course, special concern is properly given to poverty, poverty alleviation, and hence to programmes targeted to reach the poor. But those programmes cannot touch the bulk of the poor in poor countries, and conversely if growth is reducing poverty drastically, special programmes can accelerate that part of the process and deal with important, but marginal situations.

In judging the empirical record with respect to poverty reduction, two caveats are important. First, in poor countries where absolute poverty is endemic at very low levels, it is reduction in absolute poverty which takes moral precedence, not reduction in relative disparities. In some countries, such as Taiwan, growth has

reduced the Gini coefficient as well as the extent of absolute poverty. But, in other cases, for example Brazil, while growth has sharply reduced absolute poverty the Gini coefficient may well have risen during the fast growth periods [Fields (1989)].

Second, in poor countries where poverty is massive and largely in the rural areas, that poverty is directly related to the price of food and the extent of employment in food production [Mellor and Desai (1985), pp. 192–205]. Thus, fluctuations in weather provide major fluctuations in the level of absolute poverty. Thus, one can show what one likes about trends in poverty by choosing the beginning and ending years. Or conversely, a meaningful comparison of changes in absolute poverty requires careful matching of beginning and ending years for similarity in the weather.

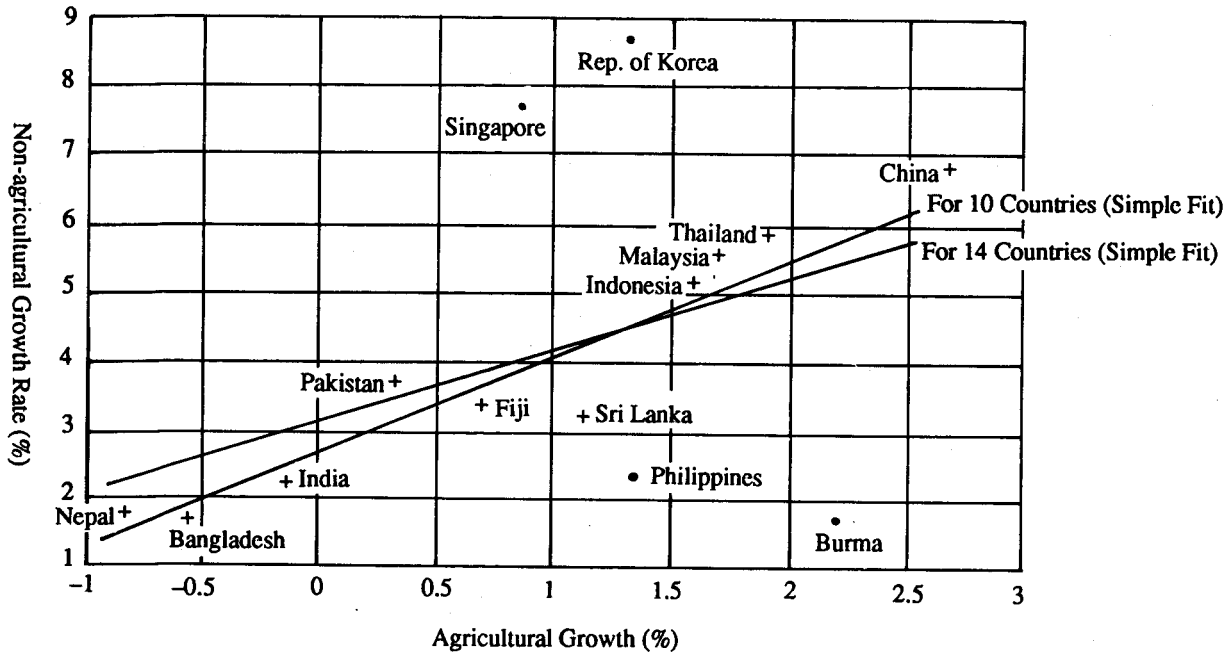
With these caveats in mind, we note that in Brazil during the 15-year period of rapid growth in the 1960s and 1970s, the proportion of the rural population falling under the absolute poverty line dropped in half. In the 1980s period of stagnation, the proportion of the rural population in absolute poverty has been steadily rising [Pastore *et al.* (1983)].

In Thailand, similarly, in 15 years of rapid growth the proportion of the rural population in absolute poverty dropped in half, and absolute poverty virtually disappeared from the urban areas [Meesok (1979)]. A similar decline in rural poverty occurred in Indonesia as rapid agricultural growth occurred in a context of large oil revenues which allowed very high rates of public investment in rural physical infrastructure and in rural education [Bevan *et al.* (1988)].

Perhaps more striking are the data from India, since it represents a very poor country. In the twenty-year period, matched for similarity of weather, from 1963–64 to 1983–84, the proportion of the rural population falling under the poverty line declined by more than half in the five states with the fastest growth rates in their agricultural sectors (Punjab, Haryana, Andhra Pradesh, Gujarat, and Maharashtra) [Dev (1988)]. Kerala also reduced the poverty ratio by half, despite doing rather poorly in agriculture. That was possible because of high educational levels facilitating high rates of out-migration to the Gulf states.

What is the explanation of these sharp declines in poverty in association with growth and what kind of growth made this possible? We note the following relations: (1) employment in nonagricultural activities is closely related to the pace of agricultural growth for the strategic reasons of effective demand pointed out above; and (2) poverty level is closely associated with the per capita changes in agricultural production because of the importance of agriculture both directly and indirectly in determining the level of employment and the level of real income.

Most notable is that almost without exception, where rapid overall growth occurs, it is associated with relatively high rates of growth in the agricultural sector. At the very roughest of estimates, Figure 1 shows for a cross-section of Asian coun-



Descriptive variables for simple fit of 10 countries (excluding Burma, Philippines, Republic of Korea, and Singapore): R -square, 0.91; value of coefficient of agricultural growth rate, 1.43; T -stat. of agricultural growth rate, 9.33; and standard error of agricultural growth rate, 0.15.

Descriptive variables for simple fit of 14 countries: R -square, 0.23; value of coefficient of agricultural growth rate, 1.07; T -stat. of agricultural growth rate, 1.92; and standard error of agricultural growth rate, 0.56.

Source: The World Bank, *World Tables*, 1988-89 Edition.

Note: Constant 1980 Price GDP at market prices in local currency.

Fig. 1. Growth Rates of per Capita Agriculture and Nonagriculture GDP, Various Asian Countries and Years, 1960-1986

tries that for each percentage point increase in the agricultural growth rate there is a 1.5 percentage point increase in the nonagricultural sector growth rate. This result derives from eliminating four outliers from the data. Of course, rapid growth in agriculture facilitates growth in other sectors, but bad policy or other forces can negate that natural tendency. Singapore is an unusual country in not having a significant agricultural sector. Burma's superb agricultural resources gave good growth in that sector despite policies that were inimicable to growth in any sector. The Philippines had good policies and good fortune in its agriculture and got good growth but had very unfavourable macro policies for growth in nonagricultural output and employment – a story to which we will return in a moment.

It is also worth noting that, in Africa and in Latin America, there does not seem to be a relationship between agricultural and nonagricultural growth, as observed in Asia [Mellor (1991)]. The reason for that is that, in those continents, policies have generally been inimicable to growth over the bulk of the past decade or two. What growth occurred in Africa was largely the result of urban-oriented foreign assistance in a context of policies unfavourable to growth. Thus, the relationship described is one which grows naturally in the context of favourable policies for growth [Mellor and Masters (1990)].

The Philippine case is worth expanding upon. The agricultural growth rate has been comparable, at close to 4.5 percent, to those of the bulk of fast growth developing countries [Bautista (1990)]. But, the growth rate for the nonagricultural sector has been substantially slower than is typical for countries with comparable agricultural growth rates, and slow by the general standards of developing countries. The result for poverty alleviation was disastrous. While comparable countries of Southeast Asia, most notably Thailand but also Malaysia and Indonesia, were reducing the proportion of their rural populations in poverty by almost half, the Philippines experienced an increase in the population in absolute poverty. This was associated with declining real wage rates, in contrast to the experience in virtually all low-income countries experiencing above average growth rates in their agricultural sectors.

The norm, of course, is for increased agricultural incomes to stimulate rural nonagricultural employment with an increase not only in the volume of employment, but with upward pressure on the real wage rate as well – the two bringing down poverty. Why did the Philippines have such contrary experience?

The lesson is that bad macro policy can wipe out the favourable effects on poverty of accelerated agricultural growth. Two sets of related forces played this role in the Philippines. Most important, the government favoured expansion of the large-scale, capital-intensive industries in the metropolitan Manila area. The result was to provide massive credits to the private sector for these specific purposes. This expanded the monetary base, which was inflationary, and hence encouraged an over-

valued exchange rate as devaluation was eschewed in the inflationary environment. The overvalued exchange rate favoured industries' importing capital equipment as they were allocated foreign exchange, but penalized small-scale manufacturing which depended in part on imported raw materials. The generally inflationary situation also constrained the government budget, which was in any case allocated heavily to support the urban-based industry and so investment in rural infrastructure declined sharply.

Thus, agriculture-stimulated rural activities were penalized in two ways. They faced a capital market in which the bulk of capital was coopted for other purposes and investment in rural infrastructure was reduced thereby depriving rural industries of the declining costs associated with improving physical infrastructure.

Why is coopting of capital so bad for small rural industries? After all, a major part of the case in their favour is that they generate much of their capital needs internally. However, a vigorous rural industries sector such as that of Taiwan has large numbers of small rural firms, most of which are largely self-financed, but a sizable proportion of which have the entrepreneurial capability to expand beyond those capital means. If that vigour is to be realized, there must be an active national capital market extending into the rural areas. From that, we learn an important lesson as to the importance of institutional credit for rural areas.

AGRICULTURE AND THE PATTERN OF URBANIZATION

The faster the agricultural sector grows, the faster its relative size in the economy declines. This follows from empirical observation (for example, see Figure 1 in this context), but is theoretically derived from Engel's Law and the nature of rural consumption patterns. Thus, an emphasis on agriculture will not slow the pace of urbanization. However, it is not the pace of urbanization nor the eventual magnitude of urban populations that is troubling. What is troubling, as we project urban population, is their concentration in a few megalopolises and the incidence of urban poverty.

As we can see from the example of Thailand, rapid rural growth can be expected to reduce urban poverty. It does so, not by slowing migration, for that is to the contrary. But, by raising rural incomes, migration does not occur unless urban opportunities more than match the newly elevated rural levels of income.

Thailand also shows us another striking aspect of rural growth. The proportion of the population counted as rural in Thailand only declined from 82 percent to 74 percent over a twenty-year period [Thailand National Statistics Office (Various Issues)]. At first glance, that would appear to show a slowing of urbanization, but more properly it shows a dispersion of urbanization. Indeed, a large population is in nonagricultural activities in population concentrations, so small as not to count as

urban areas. At the other end of the spectrum, in the Philippines, the concentration in Metro Manila has continued to increase throughout the past several decades. That is because of lack of demand pull in the more decentralized urban areas.

For rural-urban areas to grow, they must have good infrastructure of transport, electricity, and telephones otherwise their production costs will not be competitive, with more centralized urban areas. But, as those amenities and schools improve, they become increasingly attractive places to live and at lower social cost.

AGRICULTURE AND THE PRIVATE PUBLIC SECTOR RELATION

Agriculture's multiplier effects on other sectors are weak if agricultural incomes are highly concentrated as in the case of large-scale plantations and other types of large-scale farming. It is the expenditure patterns of small farmers that provide the local, labour-intensive goods and services stimulus. Thus, agricultural production is optimally private sector and small scale. It is the latter which calls for substantial public sector activity. The small-scale unit cannot be expected to provide physical and institutional infrastructure for itself.

The primary stimulus of agricultural growth is to the small- and medium-scale goods and services sectors. Of course, both agricultural production and the nonagricultural activities stimulate use of substantial quantities of capital intensively produced intermediate products – for agriculture, fertilizer is an example; for non-agriculture steel, aluminium, synthetic fibers, and so on. However, that stimulus, in an optimal strategy, would mostly go abroad, allowing the domestic capital stock to be spread more evenly over the domestic labour force.

Thus, we conclude that agricultural growth stimulates a massive expansion of precisely those activities which are most clearly in the comparative advantage of the private sector. We can see this concept from several sides. The activities are those for which small-scale firms have a comparative advantage – they have high labour and materials components to their cost structure – as a result labour management and acumen in trading (purchasing) raw materials is important. Those are both private sector areas of advantage.

With such private sector orientation, it is important that markets be allowed to operate efficiently and effectively. So many firms producing such diversity can only be regulated by market forces. But, precisely because of the small scale of individual firms, there is an important set of functions for the public sector. These are usefully categorized as: two areas requiring massive investment *viz* education and physical infrastructure; the area of regulation to ensure that markets operate competitively; and the area of institutional development to provide services to the private sector that it is unlikely to provide for itself. We will dilate briefly on each of these.

Evidence, notably that of Richard Sabot and his colleagues at the Pakistan Institute of Development Economics and elsewhere in Pakistan, is rapidly accumulating as to the high returns to secondary education in rural areas [Sabot (1989)]. That is not surprising news to the rural people trying to get their children into secondary school. It does seem to be news to the urban *intelligencia*. We are learning that the return to education is complex. The bottom line is that massive investment is required.

Similarly, the effect of rural infrastructure on growth is rapidly accumulating, particularly by joint work with the Bangladesh Institute of Development Studies. Again, the bottom line is the need for massive investment [Ahmed and Hossain (1990)]. The size is so large as to require spreading over a 10 or more year period, and almost certainly requires developing local governmental bodies to raise the resources and to administer them.

The mechanism that ensures smooth working of markets in developed countries grew slowly over a long period of time, and so its importance tends not to be recognized. However, smoothly operating product and output markets are so important to agriculture and to small-scale nonagricultural firms as to merit special attention by governments. The needs are immense if for no other reason than the proliferation of markets over large geographic areas. The physical investment in market yards, inspection systems, and so on is large in financial and institutional terms.

Agricultural growth, as the engine of overall growth, is to be based on technological change that raises factor productivity. That innovation may take the form of change in the product mix, including development of new markets, overseas or from rising domestic incomes. But, more generally, biological science innovation will be the core of the innovation and that requires complex research institutions. Those may arise, in part, in the private sector, but the continuing difficulties of charging for biological research restricts the private sector from large areas of research with high social returns. Thus, one of the most critical areas of public investment is research and the education that must be the complement of such research.

As the private sector develops and public support systems improve, an increasing share of support for small-scale agriculture will come from the private sector. But conversely, at early stages of development, activities which will eventually be in the private sector must commence in the public sector. One of the most complex tasks of government is diagnosing in which areas it should introduce its scarce capacity to develop institutional structures.

For agriculture, after research, probably fertilizer distribution and credit are the obvious areas for government to work initially. Rural financial markets have to be developed; scale of operation tends to be small when financial intensity is low and transportation slow. Farmers require ready physical access to branches of national credit institutions for both borrowing and depositing. The optimal density

for the longer run will require losses in the short run as volume is built. One way or another, that must be subsidized in the short run. A strong national commercial banking system may provide those subsidies or government may have to do so in the short run. This is a complex area fraught with many perils.

Fertilizer is so critical to increase agricultural incomes that government must encourage the private sector to relieve itself for other activities. But, farmers cannot be kept waiting for fertilizer while the private sector prepares itself. Thus, government may have to absorb losses of low volume fertilizer distribution points in the short run.

There are a myriad of similar institutional decisions that must be made. The point is that the demands on government are immense, far beyond its capacity to tax and organize, and so strict priority setting is critical.

A BRIEF NOTE ON PLANNING

Planning under the old Russian-type models was a straight-forward matter, as exemplified by the Indian Five Year Plans, of specifying the objective function, the production processes, and then working a model to show all the intermediate levels of output. Of course, in practice, the data requirements of such models were impossibly large for dealing with practical development. Similarly, the contemporary *laissez faire* attitude requires no planning – the market does it. And that too is a useless oversimplification which neglects market failure for public goods.

What we delineate here is a strategy that depends on the small-scale sector and hence is far too complex for anything other than market forces to determine; but, at the same time, the need for public goods with long gestation periods is immense. The market will not operate efficiently for those public goods, because of the long lead times required. It is no use waiting for the price of wheat to rise to start planning a wheat research station, or for local interest rates to skyrocket to start planning a national financial market. For these activities, careful thought has to be given to what processes will be needed and what the priority is in their provision. That requires complex knowledge at the sectoral level.

Planning for an agriculture-based, high-employment strategy then requires a broad strategic statement and then sectoral strategies for the essential public goods required for each of the sectors. The latter requires highly trained sectoral economists organized into effective teams.

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Comments on
“Agricultural Links to Nonagricultural Growth:
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The paper makes four major points. First, agricultural growth must be based on increased productivity through technical change. Second, agricultural growth based on small-scale labour-intensive production helps generate employment and alleviate poverty in the rural sector. Third, urbanization is directly related to agricultural growth or lack of it with consequent impact on urban concentration and poverty. Fourth, the public sector must support the private sector in farming through infrastructure, services and credit. These generalizations are basically sound, hence no need to argue with the author. However, one would have liked to see a better analysis of each of the issues. The author glosses over some of the interesting hypotheses and empirical evidence.

The literature on the “Green Revolution” has highlighted the processes of production and adoption of new technology. It has also revealed the constraints on small-scale agriculture. I wish the author had underscored the importance of the “unimodal” and “bimodal” strategies for agricultural growth.

The author will admit that the links of agricultural growth to nonagricultural complex growth are somewhat depending on the structure and size of the economy, stage of development and macroeconomic policies. All of these factors play an important role in determining the effects of agricultural growth on employment, poverty and urbanization. We get no treatment of these issues in the paper. Why do we not see a relationship between agricultural and nonagricultural growth in Africa and Latin America as we have observed in Asia? In the case of Africa, the failure was obviously with the absence of agricultural growth, especially when the weight of the agricultural sector was still quite high. But what about Latin America? I think the author is on thin ice in this case.

With regard to the concentration of urban populations, the author only asserts, but does not explain, that “lack of demand pull in the more decentralized urban areas” is the only or even a major factor for high concentrations of population in a few urban centres. The contrasting examples of Thailand and Philippines may seem appealing, but look at the continent of Africa and many countries in Latin America.

I endorse almost all of the points regarding the relationship between the private and public sectors in agriculture, except that subsidized inputs (credit, fertilizer, etc.) are not good incentives for increased productivity. On the contrary, they distort allocation of resources and create further disparities between large and small farmers in their accessibility to these inputs.

I am disappointed by the author's "brief note on planning" at the end of the paper. I do not see any relevance of the section to the rest of the paper. What is "planning" in the context of promoting rapid agricultural growth based on a strategy of high employment?

Mahmood Hasan Khan

Simon Fraser University,
Canada.

**Comments on
“Agricultural Links to Nonagricultural Growth:
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Building on his earlier path-breaking work on the role of the agricultural sector in economic development, Professor Mellor makes a cogent and strong case for agriculture-led industrialization. In the context of the proposed strategy of development, Professor Mellor provides an extended discussion of the links between agricultural and nonagricultural growth as these relate to employment generation, poverty eradication, and spatial dispersion of economic activity. The roles of the private and the public sector and investment requirements for the implementation of the proposed strategy are delineated at length and with extreme care.

As a strategy of development, the agriculture-led industrialization proposed by Professor Mellor generates both rapid growth and sharp eradication of poverty in rural areas and small towns where the bulk of poverty is concentrated in developing countries. An expanding agricultural sector provides the raw material, wage goods, and markets for a complementary industrial expansion. The public sector supplies the supporting infrastructure in the rural areas and small towns. The labour-intensive processes and products generate an adequate demand for labour, whose fulfilment results in the rapid eradication of absolute poverty. The strategy proposed is based on sound economic theory. It contains in it an engine of growth. The increased agricultural supplies result from improvement in factor productivity, while the domestic demand generated from the rapid growth in employment at rising wages removes the demand constraint. Furthermore, the strategy has been validated by Taiwan's historical experience, Japan and parts of Pakistani and Indian Punjab. Sluggish growth in the world economy, coupled with a restrictive trade environment during the 1980s, lends additional support to Mellor's proposed strategy as domestic demand replaces the reduced foreign demand as the main driving force behind the development process.

The developmental gains measured in equitable growth from agriculture-led industrialization depend on a number of factors.

First, the country pursuing the strategy should have a large agricultural sector for it to provide an adequate engine of growth. Small countries and/or large countries with an insignificant agricultural sector imply limited mileage for growth and poverty eradication to result from the proposed strategy.

Second, even in countries where the proposed strategy is a viable proposition appropriate economic policies determine the speed and magnitude of benefits. Professor Mellor is aware of the importance of optimal economic policies as is evident from his discussion of the Philippine's case where a high agricultural growth rate was associated with low industrial growth and high incidence of poverty. This unexpected result is explained by sub-optimal macroeconomic policies adopted by the Philippine government. Optimal economic policies depend on specific conditions prevailing in different countries and any generalization in this area would be hazardous. However, in Mellor's world, the need to establish a modern fiscal system that provides for an elastic tax system and an efficient financial system that allocates domestic savings between the sectors earlier on is urgent. The investment needs of the strategy are immense and most of the growth occurs in rural industry and agriculture that are traditionally difficult to tax. The imperative of reducing the fiscal deficit and the non-inflationary financing of public expenditure provide a justification for an effective and comprehensive programme of tax reforms.

Third, Mellor's optimal division of responsibilities between the private and the public sector is well taken but needs to be supplemented with an explicit policy guideline that the government act competently in the spheres assigned to it. Since the quality and competence of governments in most low-income countries has deteriorated over time, this process of institutional decay needs to be reversed. In the same vein, the private sector needs to be fostered by reversing the policies inimical to the private sector in both agriculture and industry.

Professor Mellor's strategy of reducing poverty via appropriately structured growth, as argued above, is a valid strategy of development. However, it may have certain limitations that need to be noted. Some groups that do not have access to assets such as land, or do not possess the right types of skills and other labour characteristics, may be left out of the development process *a la* Mellor altogether. This limitation of the proposed strategy is, however, an empirical issue and should be assessed in relation to the poverty outcome from alternative development strategies. That the competing development strategies like import substitution are associated with a high level of hard core poverty for many social groups has been amply documented. Putting in place safety nets and appropriately targeted poverty programmes can protect these specific groups and mitigate their poverty during the structural adjustment, when the economy is transiting from being a largely agricultural economy to a predominantly industrial one. Cases of permanent hardship may be dealt with through the proposed safety nets that provide assistance on a continuing basis. That Mellor is again aware of this aspect of his model is clear from his observation that the problem of hard core poverty is easier and cheaper to handle with the help of special anti-poverty programmes in cases where the bulk of poverty has already been eradicated by an appropriately structured development process along the lines