

Chapter 5: Low Income Asia

Of the more than one billion people in the Low Income countries of Asia, about half live in absolute poverty. Four large countries—Bangladesh, India, Indonesia, and Pakistan—contain about two-thirds of the world's absolute poor. The main reason for the stagnation in the living standards of the Asian poor has been slow economic growth.

In these predominantly rural economies, the key to alleviating poverty is to accelerate the growth of agricultural incomes, because the majority of the populations and of the poor live in rural areas and earn incomes directly linked to the growth of agriculture. The growth of non-farm incomes in rural areas (from rural services

35. Dependence on Agriculture in Low Income Asian Countries

	Percentage of Population in Rural Areas, 1975	Agricultural Product as Percentage of GDP, 1976
Bangladesh	91	59
Burma	78	47
India	78	47
Indonesia	81	29
Pakistan	73	32
Viet Nam	83	..

.. Not available.

Source: *World Development Indicators*, Tables 14 and 3.

and ancillary manufacturing activities, for example) also depends on the pace of agricultural growth. These sources of income can be extremely important to the very poor in rural areas who do not own land and to small farmers who rely on wage employment as a source of supplementary income. The growth of agriculture also is an important factor in industrial growth: a large part of domestic consumer demand for industrial products depends on agricultural prosperity, and a significant proportion of manufacturing activity (an estimated 40 percent in India, for example) is based on agricultural raw materials.

Within the rural sector, at the core of the poverty problem are families who either own and cultivate very small holdings of land or own no land at all. However, the fortunes of the

36. Marginal Farmers and Landless Households in Low Income Asian Countries (Percentage of rural households)

	Bangladesh 1967-68	India 1971	Indonesia 1971	Pakistan 1972
Landless	31	10	33	34
Less than 0.5 Hectare	22	30	31	3
0.5-1 Hectare	17	16	^a	4
Total	70	56	64	41
Number of Households (millions)	7	44	13	3

Note: The data in this table come from official sources in each of the countries. They are not strictly comparable and should be construed only as orders of magnitude.

^aA marginal farm in Indonesia is defined as less than 0.5 hectare.

marginal farmers and the landless cannot be isolated from those of the rest of agriculture, and specific programs to help these disadvantaged groups cannot succeed without growth and change in agriculture as a whole. The rural poor are part of an ancient and well-established social structure, and efforts to improve their productivity without regard to this structure are likely to be frustrated. Also, much of the development needed in agriculture requires investments that are not divisible, especially irrigation programs for both surface and ground water. Therefore, agricultural development programs must be designed to raise agricultural productivity across the board while ensuring that the small farmer has equitable access to modern technology and inputs, and that the potential for employment is not lost through uneconomic use of labor-saving farm equipment.

The next section considers the potential for more rapid agricultural growth and the conditions for greater industrial dynamism. It is followed by three sections that consider issues relating to the distribution of the benefits of growth: raising the productivity and incomes of small farmers, especially tenants; policies to encourage the growth of employment, including the use of public works schemes; and the demographic pressures on scarce resources.

Accelerating Growth

The projections in Chapter 4 show a rapid increase in the rate of economic growth in Low

Income Asian countries. The increase is predicated on a large rise in domestic savings and, most importantly, on a doubling of the rate of growth of agriculture.

37. Growth in Low Income Asia, 1960-85
(Average annual percentage growth rates, at 1975 prices)

	1960-70	1970-75	1975-85
Gross Domestic Product	2.4	3.9	5.1
Agriculture	1.4	1.5	3.0

Agriculture

The burst of agricultural expansion in some parts of Asia in the 1960s based on the introduction of high-yielding seed varieties, which has been dubbed the Green Revolution, appears to have slowed down, and agricultural production has grown rather slowly during 1970-75. Most observers agree that this performance is well below the potential of the region, taking account of technological conditions and the existing infrastructure. The remarkable technological advances in genetic adaptation and cultivation practices over the last two decades have created yield potentials for both small and large farmers that have still not been fully exploited, although urgent attention must be given to further seed development covering a larger number of crops. With concerted efforts to remove obstacles that are already well recognized, it should be possible to raise agricultural growth rates to, and possibly even beyond, the projected 3 percent a year during the next decade.

The sources of potential growth in agricultural production are very different in Indonesia and South Asia. In the latter, the extension of cultivated area has now approached its limits and further increases in production will depend on increases in yields. In Indonesia, only about half of the cultivable area is so far under cultivation. The problem lies in the extreme concentration of population in a few islands while the land in the other islands is underused: Java, Bali, and Madura have two-thirds of Indonesia's population on only 7 percent of the land. Because of fertile soils and favorable climatic conditions that permit multiple cropping, Indonesia's rice yields are high, enabling these islands to support a population denser than in Bangladesh. But with rising demographic pressure, land has been fragmented into smaller and smaller holdings: the average farm size in Java, Bali, and Madura is only 0.6 hectare and rural households depend heavily on non-farm incomes for their minimum consumption needs.

Although rehabilitation of the old irrigation

systems could increase yields in the densely populated islands, especially of food crops such as maize, soybeans, and cassava, Indonesia's major source of accelerated agricultural growth will be the development of the other islands. Encouragement of migration is a part of official policy but the actual movement of people is still very small, probably not more than 30,000 families a year.

In South Asia, an immediate source of gains in productivity is the improvement of simple crop management practices, beginning with increased plant density and proper plant spacing, followed by the use of good seeds, seed treatment, proper tilling, weeding, and better preparation of seed beds and nurseries. These improvements are capable of raising yields substantially without any increase in inputs other than labor and better use of information. Recent experience in India suggests that yields could be increased through such measures by 10 to 30 percent on rainfed land and by 25 to 50 percent on irrigated land. How fast the increases can be realized will depend on how rapidly agricultural extension services can be made more effective. Efforts to improve the extension service in India by enforcing rigid visit schedules and relieving extension agents of other tasks have proved remarkably encouraging. While it is still early to make a definitive judgment, it would appear that production increases of 1.5 to 2 percent a year in agriculture for a decade or more might be possible solely on the basis of existing infrastructure and levels of inputs, if there is substantially better transmission of knowledge and more intensive use of labor.

Further increases in yields can be obtained by making fuller use of scarce land through multiple cropping. One of the most important prerequisites for this is water. At present, only 10 to 15 percent of the agricultural land is used for multiple cropping in India and Pakistan, and about 40 percent in Bangladesh, compared with nearly 90 percent in the Republic of China, where the irrigation system is well developed. In currently irrigated areas, increases in cropping intensity require improved arrangements for sharing water: farmers, including those with downstream holdings, need to be confident in advance of planting decisions that they will receive their entitlement of irrigation water. Multiple cropping generates a very high demand for labor, with significant benefits for underemployed smallholders and for the landless who depend entirely on wage incomes. But raising cropping intensity to more than two crops a year

is difficult. It depends on varieties of crops that mature quickly, and requires careful and scientific management so that activities are appropriately timed. Efficient marketing arrangements need to be complemented by distribution networks that ensure that inputs and services are available on time and to all, including small farmers.

Further productivity increases beyond those obtained by changing cropping practices require additional inputs such as better seeds, nutrients, and pesticides, as well as water. With water available at the right time, and increased use of high yielding seeds and nutrients, yields that are 20 to 120 percent higher are possible under irrigated conditions, depending upon the crop and variety sown. In most rainfed areas, the potential is far smaller, unless there is a major research breakthrough. Increased irrigation and better water management are thus central to raising yields and absorbing more labor in agriculture.

There is a very large and undeveloped potential for irrigation in this region. About a quarter of India's present farmland is irrigated and it is known to be possible to raise this to a half. The development of Pakistan's irrigation potential is much further advanced after a century of irrigation from the waters of the Indus river system, but more land could be irrigated, especially with further groundwater development. In Bangladesh, water resources are abundant but unruly: long, dry periods are followed by flooding from the enormous Ganges-Brahmaputra-Meghna river systems which spread out over the vast, flat alluvial deltas. Drainage, flood control, and minor irrigation projects are required to harness the water resources more effectively. In Indonesia there is potential for doubling the present irrigated area with the construction of new gravity systems, and development of swamps and tidal land outside Java. Extensive groundwater systems can also be exploited in the longer run. Burma has a large potential for rapid expansion of high yielding agriculture, especially in the reclamation and development of the vast paddy regions of Lower Burma, where there are still about a quarter of a million hectares of abandoned ricelands.

Even where irrigation capacity has been built, water is often used inefficiently. India has identified about fifty large irrigation projects built over the past quarter century or more in which productivity could be greatly increased with better use of available water. An example of the factors that reduce the efficiency of water use throughout the region is found in Pakistan's cen-

tury old irrigation system in the Indus Basin. Wasteful water management and poor maintenance can be blamed in large part on the hierarchy of social relationships among farmers. Large and influential farmers are usually able to get their water allocations in full and on time, regardless of the total amount of water available; their allocations are likely to be larger than are needed for economic use (although not from the users' viewpoint) because nominal water charges are unrelated to the amounts used. There is a huge waste of water; as a result the supply to a large section of the command area is inadequate and erratic, and the size of the command area itself is uneconomically limited. Farmers favorably placed in this system, who are usually also those with most influence on its care and operation, have little incentive to maintain the irrigation channels. This has led to serious deterioration of the watercourses. Contributing to the deterioration is the grossly inadequate provision of public funds for maintenance, and legislative and administrative provisions that curtail the responsibility of irrigation authorities for the condition of the distribution systems below the head regulators. Efficiency of water use in the command area of the Indus Basin area of Pakistan has been estimated at 20 to 25 percent below its potential.

In many places, irrigation systems are less efficient than they might be, because their design characteristics are antiquated, or because farm holdings are fragmented into large numbers of irregular plots. Many of the systems are old, or built to design philosophies not suitable to intensive agriculture. Modern designs for new systems and renovation of old systems can add substantially to the amounts of water available at the lower end of the command area, thus easing the redistribution of water and expanding the total irrigated area.

Fragmented holdings reduce the profitability of investing in tubewells and pumps. Innovative small-scale technologies, such as shallow tubewells, still need to serve a minimum area of three to four hectares to be economic, whereas the average farm holdings, to say nothing of farm "fragments," are frequently smaller than this. In northeastern India, where the groundwater potential is great, the average farm is less than two hectares, and this may be divided into half a dozen separate plots. Tubewell development is thus limited unless there are satisfactory arrangements for sharing water among farmers—arrangements that are difficult to reconcile with rural social hierarchies to the satisfaction of smaller cultivators and credit

institutions. In Indonesia, the average farm is only about one hectare and divided into three parcels. In all countries, population growth is likely to increase fragmentation with present inheritance patterns. Legislation on the minimum size of plots could help to mitigate these effects.

Consolidation of fragmented holdings has been an objective of agrarian policy for many decades in Low Income Asian countries. It serves other objectives besides efficient water distribution—for example, land leveling and shaping, reducing the land used in boundaries, and cutting the time required to travel among plots. It also simplifies land use planning. But little land has actually been consolidated. Even where it has, the consolidation has generally been incomplete and not in accordance with any systematic plan for land, soil, and water development.

One requirement for greater progress in consolidation is an accurate updating of land records to establish land and cultivation rights. This is a difficult task for tenanted land but is manageable with official support. The latter, however, is sometimes lacking, because of landowners' concern that the enforcement of tenants' security and other tenancy reform regulations may portend the implementation of land ceiling legislation. Nevertheless, both tenants and landlords benefit from the productive advantages of consolidation. The possibilities for enlisting their common interest in support of consolidation have been demonstrated in a few places in India, and could be much more widely pursued in South Asia. Consolidation would be facilitated if it were made a compulsory part of a package of public land and water development, which simultaneously provided employment for surplus rural labor while enhancing the value of land.

Throughout Low Income Asia, increased emphasis must be given to projects that will yield quick results in order to increase farm incomes, including completing work on large-scale irrigation projects started earlier, so that water can reach the farms. It will also involve accelerating programs for installation of tubewells and low lift pumps, rehabilitation of water tanks, and extension of existing command areas. While such investments can yield relatively quick returns, accelerating development in these areas will require large increases in investment and a great expansion in the number of trained technical and administrative personnel. The latter are unlikely to become available unless there is confidence that increased levels of investment can be financed. To maintain accelerated growth in

irrigation, it will also be necessary to include in current programs adequate resources for the preparatory work for major new facilities, without which the momentum of irrigation development will suffer. The expansion of irrigation is unlikely even to approach the scale required without large increases in international financial assistance on concessional terms, on an assured long-term basis to permit the necessary planning.

Industry

There have been periods of rapid industrialization in the past two decades, but in recent years growth of production has been uneven and generally sluggish, while the contribution of industry to employment has been modest. A common element in the industrialization strategies of Low Income Asian countries has been a high level of protection from import competition and a preoccupation with the expansion of physical capacity rather than competitive efficiency. There have also been differences in strategy: India has emphasized industrial self-sufficiency based on major government investments in industry and detailed planning of inter-industrial linkages; Pakistan up to 1970 relied mainly on the growth of private enterprise induced by large incentives tailored to the requirements of individual industries. Despite these different approaches, the main characteristics of the industrial structure today are high production costs and excess capacities. The poorest industrial performance in recent times has been in the manufacturing of consumer goods. This reflects the slow and uncertain growth of demand from agriculture and the lack of sustained and reinforcing momentum within the industrial sector.

With a more favorable policy environment, industry can clearly grow much faster than it has. Some of the countries in the region have well-developed infrastructures, including a sophisticated network of financial and commercial services, a broadly based capability in science and engineering, and extensive managerial and industrial skills. These are assets lacking in many other developing countries even at higher levels of income. Although, as noted earlier, average production costs tend to be high in relation to international prices, in most industries there are many firms, both public and private, which have achieved high standards of efficiency.

In India and Pakistan, the efficiency of some firms demonstrates that vigorous industrial growth is possible. However, they have been, and continue to be, impeded by industrial

policies that rely on extensive systems of licensing and controls. These systems enjoy a considerable measure of support from both official circles and industrial interests, where the fairly widespread aversion of private industry to competition, whether internal or external, links up with socially motivated official desires to contain the economic power of the more efficient firms. A major dilemma in planning industrial strategy is how to resolve the conflict between these social objectives and the requirements for a dynamic, efficient industrial sector that can play a significant role in creating new employment opportunities and in reducing the prices of industrial goods to agricultural consumers, thereby stimulating additional domestic demand.

Small Farmer Productivity and Incomes

Small farmers cannot participate fully in exploiting the potential for productivity gains in agriculture without institutional support that is responsive to their needs. The small farmer has many characteristic disadvantages. He is short of cash and has less access to medium-term institutional credit. This limits his ability to undertake on-farm investments or use modern inputs to the same extent as larger farmers. He is more vulnerable to risk, and hence more cautious about innovations of uncertain profitability and about decisions whose outcome will be affected by such uncertainties as the weather.

Despite these disadvantages, experience has shown that with adequate access to basic inputs, the small farmer is fully capable of raising yields as high as those of larger farmers, and frequently higher. The intensity of multiple cropping is, on average, greater for small than for large farmers, a fact of major importance when land is as scarce as it is in the agricultural areas of this region. In the areas penetrated by the high yielding varieties, small farmers' acceptance has caught up with the rest after some initial delays, suggesting that small farmers are not averse to adopting innovations once their reliability and profitability have been demonstrated convincingly. To spread the acceptance of innovations more widely, small farmers must receive strong institutional support to help meet their demands for vital inputs—water, credit, and information on improved cropping practices.

Of all the numerous constraints on the productivity of the small farmer, perhaps the most important is poor access to water. How far he can take advantage of the improved varieties of seed (which respond best to input-intensive cultivation practices), use more fertilizer, or

increase the extent of multiple cropping depends on whether he is assured of adequate and timely irrigation. Even when the general irrigation infrastructure exists, the small farmer suffers two major handicaps in using water. The first, which applies primarily to surface irrigation, but also to public tubewells, is that he is generally discriminated against because of the small size of his holding and the usually partisan allocation of water in surface irrigation systems. In referring to this problem above, it was noted that it led to considerable waste of water. The direct effect on the small farmer is, of course, more severe. Uncertain as to when he will receive his allocation of water and how much he will receive, he is reluctant to adopt cropping practices that rely on the timely application of water, and thus continues to produce well below his potential yield. Greater community participation in the decisions on water use, backed by official irrigation and extension services, has proved helpful in assuring a more equitable and efficient distribution of water. This, in turn, has permitted the same volume of water to irrigate a larger area through more efficient use and through better private maintenance of water channels.

A further handicap for small farmers is the lack of savings and medium-term credit to invest in wells and other on-farm requirements to take advantage of the irrigation potential. Such loans, because of their large size and long maturity, are not as readily available from moneylenders as seasonal crop loans. Medium-term credits for equipment and farm improvements must come mainly from official and cooperative institutional channels, which so far have seldom catered to and often been inaccessible to small farmers.

The need here is not to subsidize interest rates but to increase the availability of medium-term credits, avoiding institutional forms that are highly bureaucratic and inflexible. India has moved a long way in this direction through the large and extensive credit services provided by the Agricultural Refinance and Development Corporation, whose assistance is aimed to include small farmers. In Indonesia, the BIMAS and INMAS programs have been established to provide support in the form of credit and modern inputs. Such institutional support is, however, not yet well developed elsewhere in South Asia.

An important institutional handicap in lending to small farmers is collateral. If land is required as collateral, credit becomes much less accessible to small farmers, especially tenants,

whose rights to land are seldom properly recorded and are not always acknowledged. If credit institutions are to play their role in transforming agriculture, they will have to be receptive to continued innovation in collateral procedures. Alternatives to land as loan security need to be explored along such lines as closer contact with borrowers and supervision of credit use, with extended crop liens for medium-term loans.

The present systems for transferring technological innovations to small farmers are frequently cumbersome and ineffectual. There are two aspects to this problem. First, small farmers tend to be less familiar with known crop management practices for improving yields because they are less educated and tend to be neglected by the extension agents. Since extension agents are poorly paid, they are beholden to the larger farmers in many ways and hence more solicitous of their needs. They spend little time with small farmers, who in any case rarely regard them as reliable sources of information about cropping practices. This can be remedied. Fairly wide experimentation in India has demonstrated that the small farmers can be reached effectively with different organization and procedures for handling agricultural extension, if greater responsibility is placed on the community for monitoring the regularity and quality of service. This arrangement can and should be applied much more widely to reach small farmers in other parts of Asia.

The second aspect of the technology issue is the relevance of agricultural research to problems of particular importance to small farmers. One area of wide relevance is the development of high yielding varieties of crops, including tropical root crops, suitable for arid agricultural systems. Another is research on cropping systems and practices that are practical for the small farmer who may be short of cash but has abundant labor. This is especially important for the efficient use of water and nutrients in multiple cropping systems. Such research has to be done locally, to take account of ecological differences. Hence, widely dispersed and adequately staffed research institutions are necessary. Their establishment will require additional investment and support.

The farmer who cultivates land as a tenant has less incentive to raise his productivity than one who owns his land, for two main reasons. First, as the duration of his lease is uncertain, he is less inclined to undertake investments on the farm that do not have a very early payoff. The legitimacy of this concern was demon-

strated recently when the introduction of the Green Revolution technologies in parts of India and Pakistan led to some eviction of tenants and the resumption of land by landlords for cultivation using more mechanized techniques. The second reason is that as the landlord has increasingly tended to take a share of the output instead of a fixed amount of rent, the tenant finds it less profitable to use purchased inputs. The force of the latter reason is greatly diminished, however, when the landlord also contributes a share of the input costs, as has begun to happen in recent years.

While the problems created by tenancy are significant, they should not be exaggerated in the context of the development goals of accelerating growth and alleviating poverty. With some exceptions, tenancy prevails in only a small part of the agricultural sector, and most farmers are as likely to lease land out as to rent it. There is thus no sharp dichotomy between landlord and tenant in most areas in this region. Less than 6 percent of the agricultural land in Bangladesh, India, and Indonesia is cultivated by tenants who do not also own or rent out land; in Pakistan, where the average size of tenant holdings is considerably larger, the proportion is under 30 percent. Further, the area under tenancy has been declining in the last decade or so. Where new technologies have penetrated, not only does the scale of tenancy decline but the relations between landlord and tenant are redefined, the sharing of input costs being a prominent example of changes that take place.

The responsiveness of tenancy relations to changes in the available technology and the extreme difficulty of enforcing reform legislation dealing with tenant rights, such as ceilings on rent, suggest that official action should concentrate on measures that are likely to prove of tangible and lasting benefit to the tenant. The most promising line of action would be to combine the creation of an environment for rapid technological change and productivity growth with attempts to tie the landlord's share of output, which is generally around one-half, more closely to his share of input costs, which tends to vary widely but is generally quite low.

Marketing and distribution is another area in which the small farmers are handicapped. This is particularly true in the case of products which must be processed relatively quickly to avoid spoilage. Generally, the small farmer does not have the physical or financial capacity to hold his produce off the market at the time of peak supply. The trader or processor who can purchase

at those times stands to benefit substantially. In addition, procurement is often a monopoly in a specific area, further reducing the ability of the small farmer to obtain a remunerative price.

There are numerous examples of how small farmers can combine forces but few experiments have been successfully sustained. One such, a dairy cooperative at Anand in India, has been in operation for thirty years, has expanded its system to several States, and is about to become a national program. By owning its purchasing, processing, and marketing facilities, the cooperative assures the members a reasonable price throughout the year since it has the capacity to convert milk to powder and other storable products in times of peak supply. By combining cooperative participation with hired professional management for all aspects of the operation, it increases the income of small farmers and landless laborers while remaining a profitable enterprise. These underlying principles are more broadly applicable to other products and other countries.

Employment

Gains in the productivity of small farmers, even if equitably distributed, will not suffice in dealing with the problems of absolute poverty in rural Low Income Asia. A significant proportion of rural households do not have any land and thus cannot participate directly in these productivity gains. Further, productivity increases alone will not be enough to raise the incomes of those with very small farms above poverty levels. These households have to rely on non-farm sources of income.

Measures to increase rural employment will form a very important part of a strategy for alleviating poverty in South Asia. All of the income of the landless households and a large part of the income of very small farmers is derived from sources other than cultivation on their own farms. The smaller the farm, the greater the proportion of total household income derived from outside sources. These include working on larger farms, raising poultry, small livestock and dairying, fisheries, forestry, rural handicrafts and manufactures, services and processing activities, and remittances received from family members in urban employment.

Since most of these activities are either agricultural or closely related to agriculture, fast agricultural growth is obviously the first requirement for raising non-farm incomes more rapidly. Faster growth in output even on larger farms, provided they are not excessively mechanized,

can play an important role in this regard. But the available evidence suggests that unless agricultural growth exceeds 3 to 4 percent a year, and unless this rate is sustained for about a decade, the additional wage employment generated would remain too small to contribute much to the solution of rural unemployment problems in the subcontinent. This reinforces the need to step up investment in agriculture, particularly in irrigation, as part of a strategy to instill more dynamism in the sector.

Growth of medium- and large-scale industry cannot be relied upon to make more than a small difference to the employment situation in the next decade or so, as in most countries in the region it accounts for less than 10 percent of total employment. Some gains could be realized from a more labor-intensive pattern of industrial growth. To achieve this will generally mean encouraging small enterprises which, as a group, employ the majority of industrial workers and use more labor per unit of output than larger enterprises. Policies for the promotion of small enterprises will have to be carefully designed, however, to avoid subsidizing enterprises that are engaged in production that is very capital-intensive, or in the manufacture of goods that can only be efficiently produced on a large scale. It is best to rely on measures that will give small enterprises full access to scarce inputs on the same terms as large enterprises so that they can compete on equal terms, and to provide technical and institutional support in the areas of credit, training, and technological information. Small enterprises flourish best where there is rapid growth in demand, and in a complementary relation to agricultural growth and growth of larger scale enterprises, by supplying labor-intensive ancillaries. Insufficient recognition of these complementarities, and the overzealous promotion of small enterprises as principal instruments for employment creation or regional development, may frustrate the purpose by fostering productive inefficiency.

Even if economic growth were accelerated to about 5 percent a year and the policies pertaining to small farmer productivity suggested in this chapter were fully implemented, unemployment would remain a very severe problem in Low Income Asia. The real problem is not long-term joblessness, as conventionally understood, but absence of earning opportunities in the off-peak seasons of the year. In most of Low Income Asia, nearly all the rural workers find some employment during seasonal agricultural peaks, but spend the rest of the year intermittently idle, or working on their own farms or in

casual jobs. In these jobs, productivity and earnings per worker are low, because they are spread thinly among a seasonally surplus labor supply. Both expansion of multiple cropping, to moderate the seasonal fluctuations in demand for labor, and rural industrial growth would help to reduce unemployment as, of course, would more rapid and labor-intensive urban development. But a major part of the rural labor force would still be left without enough work throughout the year for a tolerable existence. Alternative rural employment during off-peak seasons is, therefore, a necessary component of a development strategy which places poverty alleviation high among its objectives.

It is in this context that the potential of large-scale public works programs, which can provide employment in rural areas while at the same time constructing assets to enhance economic growth, must be developed. Employment-creating public works programs have frequently been used in Low Income Asia, but for the most part the experience has not been encouraging. Though they succeeded in significantly raising the incomes of those employed, and in constructing economic infrastructure (mostly rural roads), they suffered from a number of flaws. The basic problem was that they were planned and implemented in isolation, usually as disaster relief, rather than as part of a broader and sustained strategy to create new rural assets and attack the fundamentals of the unemployment problem. Thus they were too small to make a real difference and were vulnerable to the pressures of local elites (landowners and rural contractors) who altered the programs to serve their own interests.

Despite these failures, interest in public works programs has been rekindled by an innovative, and apparently successful, program in Maharashtra State in India, which has a population of 58 million, of whom 38 million are rural.

From a small start in the early 1970s, the scheme has grown to generate 152 million mandays of employment in 1977, equivalent to about a fifth of the estimated rural unemployment and underemployment in the State. Present plans call for raising this proportion to over one-third in the next five years.

The essence of the scheme is a strong political commitment by the State Government to a statutory guarantee of local employment at a minimum wage to all rural residents. The emphasis is on works which directly enhance productivity, mainly irrigation and land development, and on financing by additional urban taxation, so as to minimize the inflationary consequences while transferring resources from urban to rural areas. The scheme has some problems, mainly the immobility of labor, and the difficulty of designing and implementing productive projects to coincide with the times and places where employment is required. Financing the program absorbed 7 to 10 percent of Maharashtra's total development plan expenditure in the last three years. Though the details of the scheme's operation have not yet been fully evaluated, its scale and several features of its administrative structure set it apart from previous public works programs, and offer hope that effective programs to deal with massive rural unemployment can be designed.

Demography

Population pressures will continue to be a severe impediment to economic development in the Low Income countries of Asia. By the year 2000, the population of the six largest countries will have risen to 1.6 billion from the current level of slightly less than 1 billion. The demographic outlook is not uniformly bleak, however. Fertility rates have begun to decline in some countries—among them Burma, India, Indonesia, and Sri Lanka—for a variety of rea-

38. Demographic Indicators in Low Income Asian Countries

	Crude Birth Rate	Crude Death Rate	Population Growth Rate	Total Fertility Rate	Population (millions)	
	1975	1975	1960-75	1975	1976	2000 ^a
	Bangladesh	46	18	2.5	6.6	80
Burma	34	11	2.2	5.5	31	50
India	36	15	2.2	5.7	620	958
Indonesia	40	17	2.2	5.5	135	198
Pakistan	47	16	2.9	7.2	71	135
Viet Nam	41	16	2.7	6.2	48	86

^aThe assumptions underlying these projections are described in the Notes to Table 16 in *World Development Indicators*. Source: *World Development Indicators*, Tables 13, 15, and 16.

sons, including improved nutrition, health care and female education, falling infant mortality, and organized family planning efforts. But fertility continues to be high in Bangladesh and Pakistan. Both have total fertility rates of around 7 and crude birth rates in the mid- and upper-40s. Neither country has advanced very far in providing the social services usually associated with demographic change, nor have their family planning programs been very effective.

The prospect of large additions to the population, to be supported by scarce resources, underlines the urgency of strengthening family planning programs, of establishing the institutional framework for sustained improvements in agricultural productivity, especially among small farmers, and of implementing special programs for employment and the distribution of essential public services directed at the poorest sections of society.