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URBAN DEVELOPMENT IN THE THIRD WORLD

Policy Guidelines

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To the low-income families who somehow maintain their initiative, and the underpaid local administrators, who somehow maintain their integrity—the real heroes of the battle for development.

PREFACE

The problem addressed in the present volume is that of identifying projects that are likely to benefit the urban poor in the developing world with an emphasis on those that can yield benefits relatively quickly and with relatively low levels of investment. The material presented has been prepared under the pressures of field work in the developing areas and undoubtedly suffers from the shortcomings that those pressures typically entail, but it is hoped that it will be useful to program administrators and technical staff in governmental agencies and the field offices of international agencies in the developing areas who are grappling with the task of development.

The material is intended to serve as a preliminary reference in such field work—as a reminder of at least some of the major factors that should be considered in initial project identification and in later project preparation. The guidelines on which it is based, for which the author was largely responsible, constitute a somewhat more fully developed working tool for the field, but even they are explicitly crude and incomplete. Indeed, the nature of the task is such that any attempt at a compilation of relevant material must be incomplete and can be useful, if at all, only temporarily.

It should be obvious that the present volume does not pretend to be a substitute for the specialized and detailed material needed for project preparation in each of the sectors discussed. It is hoped that it will at least serve as a clue to the kinds of more specialized material to look for.

The material presented here grew out of a project undertaken by Planning and Development Collaborative International (PADCO) for the Office of Urban Development in the Bureau for Technical Assistance of the United States Agency for International Development (USAID) in 1975 and 1976 (Planning and Development Collaborative International, Guidelines for Formulating Projects to Benefit the Urban Poor in the Developing Countries [Washington, D.C.: USAID, 1976]).

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None of the contributors to the earlier or present work should be considered responsible for its errors or other shortcomings; these are solely the responsibility of the author.

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I

THE CONTEXT AND THE APPROACH

1

THE SCALE OF THE PROBLEM AND ITS ORIGINS

The total urban population of developing countries in centers of 20,000 or more in 1974 was approximately 544 million, about 20 percent of their total population. These centers then held populations equivalent to slightly more than the 1970 combined populations of the United States, the Soviet Union, Japan, and the United Kingdom. Developing country urban populations are estimated to be growing at a rate of approximately 4 percent during the 1960-80 period, compared with a relative growth rate of 1.8 percent for total developing country populations.

In just 25 years, the developing countries may have a total urban population of about 1.4 billion, equivalent to the combined 1970 populations of the People's Republic of China, India, and Brazil and about three times the total urban populations of the developed world in 1960.[1]

By 1970, many major cities in developing countries were already larger than the urban areas of developed countries. Examples include the following: Buenos Aires, 9.4 million; Sao Paulo, 8.4 million; Cairo, 5.6 million; Calcutta, 5.1 million, but closer to 7 million if the metropolitan district is included; Seoul, 4.6 million; Jakarta, 4.5 million; Karachi, 4.2 million; and Manila, 4.1 million. Karachi alone had a 1972 population equal to the combined 1970 populations of Athens, Tsaritsyn-Stalingrad, and the Hague.[2] The annual growth rates of major centers and some intermediate cities are often 5 or 6 percent, sometimes higher. Approximately 200,000 people are being added each year to the population of Karachi, equivalent to an entire new city annually in most parts of the developed world.

Most people living in these mushrooming urban areas are desperately poor. Often 80 percent of all urban households have

monthly incomes of U.S.$50 or less. The members of many of these households are illiterate, undernourished, and weakened by debilitating diseases. Much of the labor force is unemployed or forced into "low-productivity" employment.*

The most obvious reason for such high poverty levels is the very rapid population growth in these cities, a growth that even the most developed urban areas would have difficulty absorbing into productive employment. In addition, structural factors in the economies of the developing countries' urban areas tend to exacerbate and perpetuate poverty and unequal income distribution.

PRINCIPAL CAUSES OF URBAN POVERTY AND UNEVEN INCOME DISTRIBUTION

Structure of Employment

The urban economies of the developing countries are unable to absorb their growing populations into high-wage employment. The sophistication of modern technologies (including forms of organization and financing) in urban areas, the limited demand for high-wage technologies, and limited labor mobility among technologies appear to be major factors underlying this failure.

There have been extensive industrialization drives since the 1950s. However, much of this industrialization has been capital intensive, and large numbers of urban workers have been forced into low-wage service and commerce activity. In Latin America, for example, the percentage of total employment in services and commerce rose from 23 percent in 1950 to 33 percent in 1969.[3]

A major reason for the failure of industrialization drives to have a greater impact on unemployment and urban poverty has been the widespread use of imported technology. Kenya, for example, inherited from the colonialist economy a structure that produced consumer goods for a limited number of high-income Europeans. An informal economy coexisted with it, which produced goods for consumption by subsistence-level Africans. Even after independence, this structure has remained intact. The high ratio of capital to labor

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*The term low productivity is put in quotation marks because such employment may, in fact, be the most productive use of a large unskilled labor force during some stages of development. Even though wages are low relative to other activities in urban areas, they usually are high relative to rural wages.

in the expanding industries of the modern sector, largely in Nairobi and Mombasa, still contrasts sharply with a labor-intensive informal sector, using local technology and low levels of investment.[4]

A similar situation has been observed in the Philippines.[5] Heavy manufacturing and import-substitution industries have been growing rapidly since independence in the largest cities, but the capital intensiveness of these industries has rendered them unable to provide necessary employment for expanding urban populations. There is a striking absence of small- and medium-scale industries using intermediate technologies that are capable of employing larger numbers of unskilled urban inhabitants.

The reasons for the continued use of technologies unsuited to economies with high proportions of unskilled labor are many. Many newly independent nations inherit a small colonial technology base and continue to import technology from industrialized countries. Capital investments are often made by foreign firms and wealthy individuals, who prefer to use imported technologies. Most industrial research is oriented toward capital and labor endowments from industrialized countries, and available technologies reflect this. Countries often have a number of fiscal, credit, foreign exchange, and legal incentives that encourage new investment to be capital intensive. Credit is sometimes available only to large-scale investors who use modern technologies. Minimum-wage laws, social security programs, and other labor policies often inhibit the use of labor-intensive technologies, even in the presence of widespread urban unemployment and underemployment. All of these factors tend to increase the disequilibrium and dualism in developing urban economies.

While steps can and are being taken to reduce the technological bias of new investment and absorb increasing numbers of workers directly into modern sector employment, most developing countries will have to rely heavily on informal sector employment to provide subsistence to the urban poor for the foreseeable future. Unfortunately, many governments view the informal sector as a source of embarrassment. Rather than fostering its development, restrictions often are placed on informal sector activities, through such measures as the demolition of squatter housing, the elimination of hawkers from city streets, trade licensing that favors large-scale commerce and industry credit restrictions, and unrealistic public transport standards.

Inequitable Distribution of Capital

Another important explanation for skewed income distribution in cities of the developing world is the unequal distribution of income-

producing assets. There is considerable evidence that the distribution of assets (fixed, working, and human capital) is even more concentrated in the hands of the wealthy than the distribution of current income. A change in the distribution of assets, including levels of education and health, should be recognized as a prerequisite to significant changes in the distribution of income and consumption.

Inappropriate Education

Opportunities for higher levels of education and literacy have been factors encouraging migration from rural areas. Unfortunately, primary and even secondary education have done little to increase employability in urban areas. Primary education often tends to be oriented toward the needs of the secondary school, but many pupils cannot go on to higher levels of education. They are left with few practical skills and inflated expectations. In the Philippines, for example, the general unemployment rate of 8 percent is far surpassed by unemployment rates of 55 percent for persons with some exposure to primary education and 26 percent for high school graduates.[6]

Other Contributing Factors

Urban poverty is often compounded by the scarcity and high cost of basic necessities. Low levels of savings, taxation, and capital formation are features of most developing countries. The large capital investment necessary for housing, sanitation, water, and other urban amenities often is not available or is available only for wealthy urban households. Formal credit usually is not available for poor families to finance housing and related infrastructure; the credit they can obtain in informal capital markets is at usurious rates. The standards of development for which they can afford to pay are correspondingly low.

The costs of fuel and food for the urban poor have risen sharply in recent years. The cost of fertilizer has affected food prices adversely. The problem has been compounded by drought in many cases. Cooking fuel has become an increasingly significant part of poor families' budgets, as forests have been denuded, and the world energy crisis has made kerosene a less feasible fuel source. The impact of these changes has been especially severe because substitutes for the foods and fuels affected have not yet been developed or distributed adequately.

Formal and informal systems of charges for urban services frequently result in highly inequitable user costs. In one major Asian

metropolis in the early 1970s, high-income households had access to 100 gallons of water per capita per day or more through a piped supply and paid only about U.S.$.25 per 1,000 gallons. Low-income households, however, had to have water carried in and paid U.S.$2 per 1,000 gallons for the much smaller consumption that was all they could afford.[7]

Organizations to help the urban poor deal with these problems are often sadly lacking. Although they usually constitute a majority, the poor often have limited political power. Their poverty, their social instability, and the transitory nature of their existence in any one place combine to limit their participation in the political decision-making process.

PHYSICAL UNPREPAREDNESS

The population load on existing urban centers in developing countries is enormous. Typically, 40 to 50 percent of urban population growth each year in major centers is from an in-migrant population even poorer than the existing urban population and suffering from the same problems to an even greater degree.

The cities carrying this population load are physically unprepared. If they are old, established centers from colonial periods, they may have an infrastructure designed for 100,000 to 200,000 people (but now supporting 2 million or more). If they are newer centers that have mushroomed in the last 20 years, they may not even have that.

One fairly typical major center, for example, had a population of just over 4 million in 1973. Approximately 45 percent of its households had incomes of U.S.$30 per month or less; 80 percent had monthly incomes of U.S.$50 or less. A majority of the metropolitan area's households were unable to afford an adequate calorie intake (2,050 calories per person per day).

Total water availability in 1973 was approximately 30 gallons per capita per day, with much of the potential supply lost through leakage and waste. There are ample supplies for the affluent (100 gallons per capita per day or more), but only a trickle intermittently (as little as ten gallons per capita per day) reaches the poor. Installed sewerage treatment capacity was only 40 million gallons per day relative to a water intake of 100 million to 120 million gallons per day. Only half of that capacity was operative in 1973, and the entire sewerage system was capable of handling only 4 percent of the biological oxygen demand generated daily.

Several hundred thousand of the metropolitan area's inhabitants are settled in sites subject to flooding in heavy rains—flooding that

costs many lives and brings sewage into hutments, with the threat of disease and property damage. About 1,500 to 2,000 tons of refuse are generated daily, but less than 50 percent of this is collected and disposed of publicly.

There were only 1.5 hospital beds per 1,000 population in 1973. There were primary school places for only about 70 percent of the primary school age population and secondary school places for only about 32 percent of that age group. There are now perhaps as many as 800,000 persons living without adequate housing. Only 16 percent of all dwelling units have water supply, sewerage, and electricity. An extravagant land-use pattern and deficient public transport systems result in long commuting times for low-income groups. Commuting absorbs 10 percent of monthly incomes of thousands of workers in outlying but heavily populated parts of the metropolitan area. Conditions have not changed for the better since the dates to which these data refer.

FISCAL UNPREPAREDNESS

Fiscal conditions vary greatly from country to country. Most national and state governments cannot support urban development adequately because their revenue base is not strong relative to resource needs and because that revenue base is generally underutilized. Often, there is also a political reluctance to give priority to a nation's urban centers, except for essential national functions, such as major industrial development and port facilities, because rural areas still have 80 percent or more of the national population.

Most major cities in developing countries have underutilized rather than excessively weak revenue bases. Indeed, because they usually are major production and sales centers and experience increases in land values that are more rapid than anywhere else in the nation, their revenue bases are relatively strong. For various reasons, local governments in developing countries tend to underutilize urban land values and capital gains as revenue sources. Land valuation procedures are erratic. Noncompliance with tax requirements on land is rarely penalized. It has been estimated that in one fairly typical Asian city with a population of several million, urban property tax revenues could be increased about six times (from about U.S.$5 million annually to about U.S.$30 million annually) through uniform and proper assessment and the application of a quite modest tax on land value. In a Central American capital, a very moderate tax of 2 percent on taxable land in 1977 could have yielded a revenue of U.S.$24 million (compared with current municipal revenues of the order of U.S.$5 million). Municipalities rarely have access to

corporate or personal income taxes, which tend to be exclusive domains of national and state governments. Local sales taxes are difficult to administer. User charges for urban services (for example, water supply) often are unnecessarily low.

The consequences of local fiscal weakness are revealed clearly by recent local revenue and expenditure figures from the developing countries. In one city with a population of about 4 million, development expenditures amount to only U.S.$8 per capita annually, of which U.S.$3 was local expenditure. In another city with a population of approximately 2.5 million, local governmental development expenditures amounted to only U.S.$.66 per capita, while annual revenues, including provincial governmental grants in the same city, amounted to only U.S.$2.50 per capita. Operating and administrative costs clearly have by far the largest claim on total local revenues. These frighteningly low figures can be compared with capital expenditures of approximately U.S.$85.50 per capita in municipalities with populations of 1 million or more in the United States in 1970-71, excluding federal and state expenditures in those local areas.[8]

POLITICAL UNPREPAREDNESS

Political processes and urban administration are even more closely intertwined in the developing countries than they are in more developed countries. Local administration often is dominated by the national political system. Key local administrators are often simply appointees of the ruling political group. Experienced policy makers elected at the local level are, consequently, relatively rare.

The prospects for effective elected local government in the immediate future vary considerably from city to city. Some cities are economically and politically strong enough to build up effective local government. In other cities, it seems unrealistic to expect local governments to be able to provide effective leadership in the near future.

The problems of urban centers were of little interest to rural elites in the preindustrial era. New industrialists were preoccupied with building their own enterprises. This, combined with a strong disinclination toward collaboration, has delayed development of urban leadership. Military or quasi-military governments that have taken over from civilian leadership have shown little initial concern about urban problems other than to maintain order. In many cases, a barrier of indifference must be overcome before cities will be able to receive the attention they deserve.

ADMINISTRATIVE AND TECHNICAL UNPREPAREDNESS

The scale of the urban management problems facing local governments in the developing countries is horrendous. The responsibilities of those who must manage major urban centers require a variety of types of knowledge—economics, business management, engineering, architecture, planning, sociology, and politics, to name just a few. The functions to be dealt with range from everyday chores, such as refuse collection, to major long-range programming to support hundreds of thousands of new low-income residents every year. Local urban administrators have almost no funds with which to work. Most of their capital equipment is run-down. They have virtually no skilled staff to support them. In one major Asian city, which had a population of approximately 4.2 million in 1973, there was not one qualified accountant in the entire municipal administration. The staff for planning totaled 50, ranging from senior officers to draftsmen; perhaps five of those 50 had enough training and skill to exert leadership. They were confronted with a population increase of about 200,000 per year. Compare that with the relaxed gentility of a recent British new town designed to support a population of 200,000 in 15 years. It had a total development staff of 400, of which many were highly qualified. It was being built in the context of a well-established national and regional infrastructure, and the population it was preparing for was literate and relatively well off.

Staffing is a problem at all levels. It is often possible to pay junior officers only U.S.$40 to U.S.$50 per month, yet they are expected to be competent and responsible. Often, there is a tradition of corruption at all levels (more pervasive if not as large in scale as that in the more developed countries).

To compound the administrative and technical problems, very few developing countries attach high status to municipal government. The career plums are with the provincial or national governments. Few developing countries are training a cadre of urban specialists, either on an emergency basis to avoid immediate disaster or with a longer-term goal of preparing for the scale of urban growth they are confronting.

POSITIVE ROLE OF URBAN DEVELOPMENT

Congestion, squatter settlements, unemployment, and other problems of large-scale urban growth often are used as arguments for trying to limit the growth of cities. However, urban growth should not be viewed as an unmitigated evil.

Individuals find cities attractive for many reasons. There are greater opportunities for employment and education than in the rural areas. Urban life offers a range of amenities and opportunities for social interaction. It also offers an escape from the many social restrictions of rural society.

Informal employment in urban services, low-income squalor, intensive use of land, and other features of urbanization in the developing areas are misinterpreted in many cases. For the street vendor and the new urban in-migrant, the opportunities for higher incomes, education, and richness of experience are far greater in major urban centers than in smaller townships and rural areas. The increasing variety of tertiary activities in urban areas, even though those activities yield low wages, are a reflection of the increased specialization associated with urbanization.

The urban areas of the developing world use scarce capital relatively efficiently. They provide employment opportunities for marginal labor groups, who would otherwise be completely unemployed. The major centers constitute large markets for both urban and agricultural output. They have large labor pools, which make them attractive to new enterprises. They keep transport costs low where a nation's resources are highly localized and where a nation is heavily dependent on exports and imports. They provide opportunities for many indivisibilities in production and consumption, including economies of scale, which make them attractive as centers for economic activity.

Firms locating in major centers often avoid the diseconomies associated with small townships or rural areas. Control over productive processes and bargaining for public services is generally easier. Concentrated development facilitates the face-to-face contacts that are crucial to business. Urban environments are relatively efficient with regard to informal education and the upgrading of skills. Urban life-styles facilitate the entry of women into the labor force. The information exchanges that take place in urban areas support innovation.

Major urban centers are also excellent risk-spreading devices for governments (which are likely to be exposed to severe cash flow problems if they try to support large populations in outlying areas), for entrepreneurs (who have access to flexible supplies of labor, materials, and services), and for low-income households.

In the long run, there are likely to be good reasons for more decentralized development. In countries such as Brazil, with widely distributed resources and a variety of substantial urban centers already established, dispersed investment may be sensible in the fairly near future. But in some cases, the processes of growth and

modernization in the immediate future can be supported most productively through programs that give primary attention to major urban centers.

One of the great dangers of continuing to harbor the illusion that the rate of urbanization will somehow slow down is that governments will not develop constructive urban strategies. A dangerously low status has been given to urban affairs and urban management in many developing countries. The essential task is not to slow down urban growth but, on the contrary, to mobilize existing resources to upgrade the quality of urban life and to use urbanization aggressively and imaginatively to increase the total resource pool.

A major part of the immediate effort in these directions must be focused on the poverty groups that dominate urban populations. The scale of the degradation for these hundreds of millions of people will worsen if effective action is not taken. There is a high probability of catastrophic social breakdowns if the problems of the urban poor continue to be neglected.

NOTES

1. Calculations based on, or extracted directly from, figures in World Bank, Sector Working Paper: Urbanization (Washington, D.C.: World Bank, June 1972) and World Bank, Atlas (Washington, D.C.: World Bank, 1972).

2. Karachi Development Authority, Master Plan Department, Karachi Development Plan, 1974-1985 (Karachi, Pakistan: Karachi Development Authority, 1973). Other figures are from Kingsley Davis, World Urbanization, 1950-1970, vol. 1, Basic Data for Cities, Countries and Regions, rev. ed. (Berkeley: Institute of International Studies, University of California, 1969).

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5. International Labour Office, Training in Development: A Programme of Employment, Equity and Growth for the Philippines (Geneva: ILO, 1974), p. 6.

6. Mark Blaug, Education and the Employment Problem in Developing Countries (Geneva: International Labour Organization, 1973), p. 10.

7. Karachi Development Authority, Master Plan Department, op. cit.

8. International City Management Association, Municipal Yearbook 1973 (Washington, D.C.: ICMA, 1973), Tables 4 and 5, p. 98.

2

THE GOALS OF PROJECTS FOR THE URBAN POOR

Improved living conditions for the urban poor must be pursued with other national objectives also in mind. There is a fairly broad consensus that increasing the total consumption available for society is a basic objective of development planning. However, it has become increasingly evident that high rates of growth in aggregate consumption do not necessarily insure higher standards of welfare for lower-income groups. Development policies, therefore, stress increasingly the need for an improved income distribution, benefits of development, as well as the need for high levels of aggregate growth.

IMPROVED CONSUMPTION AS AN OVERALL GOAL

The following are suggested as goals for projects to benefit the urban poor: the achievement of higher levels of essential consumption and the achievement of greater equity in the distribution of this consumption.

In choosing these as fundamental goals, the term consumption is used purposely in a broad sense. It is intended to encompass all the essential services that contribute to desirable living conditions, including food, water, sanitation, fuel, electricity, clothing, shelter, essential information, opportunities for social interaction, opportunities for participating in decisions that affect one's own future, and the benefits derived from a satisfying physical environment and recreation.

In formulating and comparing alternative projects, the uncertainties that surround all project implementation must be recognized. The risks to which intended beneficiaries may be exposed and the

fluctuations in consumption that may occur with different strategies should be evaluated carefully. A very risky project with high potential benefits may be less desirable than a more modest and more sure one. Middle- and upper-income groups usually have capital reserves of one kind or another and can survive even severe crises. The lower-income groups are usually the worst affected by fluctuations in incomes and public services. Part of the goal of improving consumption should be a reduction in the levels of economic, physical, and social risk to which low-income households in particular are exposed.

ACCUMULATION OF ASSETS AS A BASIS FOR IMPROVED FUTURE CONSUMPTION

Because improvements in consumption should be sustained, choices must be made continually between improvements in current consumption and the accumulation of the human and physical capital necessary for improvements in future consumption. There must therefore be a concern with the level of capital accumulation, including human capital, liquid assets, physical equipment, housing, and land, and the distribution of capital.

The concern with human capital reflects a concern with health, knowledge, skills, and sensibilities—all important to the enjoyment of a full and productive life. It therefore calls for a concern with the services necessary to develop human capital—in particular, health services, education, the dissemination of essential information, and the provision of opportunities for enriching and heightening individual sensibilities.

The goals suggested might be thought to be unduly limited. What about increased employment opportunities for the poor and increases in household income? What about a more equitable tax structure? What about greater efficiency in the production of essential goods and services? Things such as these are purposely not treated as goals because they are really intermediate project purposes and instruments for achieving the goals that have been identified. To mix instruments and objectives is to risk confusion between what must be pursued (the goals) and what may be used (assuming a variety of alternatives) as instruments for their achievement.

OTHER CONSIDERATIONS IN DEFINING GOALS

Mention should be made of possible trade-offs between the types of distributive goals discussed here and aggregate growth objectives. Empirical evidence is not conclusive, but many distributive strategies,

such as improved education and factor pricing, are not necessarily in conflict with economic growth. On the other hand, some distributive programs and policies may imply lower short- and medium-term increases in productivity and output. Growth may also be limited in the short-term if distributive policies reduce the propensities of households and enterprises to save and invest. In cases where a distribution growth trade-off exists, planners should work to define the nature and dimensions of the trade-off. Policy makers must then decide the extent to which a relatively rapid improvement in the welfare of lower-income groups is valued over higher aggregate levels of consumption in the future.

If improved distribution of the benefits of development is to be an important objective, macrodevelopment programs should be built up carefully from microactions. Individual projects should reflect the needs, capabilities, and aspirations of many different groups within urban populations.

There is likely to be a need for projects that are responsive to the new individual immigrants—individuals without families who may need support as they make their first contact with the city, assistance in upgrading their skills, assistance in obtaining rudimentary shelter, and assistance in gaining access to urban services. There should be projects to assist households in similar ways, incorporating the specific types of support needed for children of various ages, women of childbearing age, heads of households, and older members of extended families. There should be projects designed specifically to assist children, reflecting their needs for health and education and the probability of their having to work to contribute to their family's survival while they are still of primary school age. There often will be a need for projects to assist poor households who have been in an urban area for a considerable period but who have failed to launch themselves on an upward development path, often to the point where they have given up and are stagnating economically, socially, and psychologically. There is likely to be a need also for projects designed to help upwardly mobile households, taking advantage of the demonstration effect of their relative success (and, possibly, their potential for leadership).

To formulate such projects requires understanding and skills that still are in very short supply. Indeed, some existing administrative systems, especially those inherited from colonial predecessors, are almost the opposite of what is necessary and tend to deal with the poor as a nuisance group.

3

VARIETIES OF URBAN POVERTY

Groups exposed to different types and levels of poverty have very different interests, needs, and economic demands. They are likely to be affected by particular types of public action in very different ways. Before focusing on the types of projects likely to have the most beneficial impact on individual groups, it is important to identify the major types of poverty groups likely to be encountered.

BASIS FOR IDENTIFYING TARGET GROUPS

Poverty groups can be defined in terms of the following: (1) their levels of current consumption and their prospects for improving them under existing conditions and trends, (2) the extent to which they already control or can be expected to control capital assets that could provide a basis for future consumption, and (3) their territorial orientation. This classification of target groups is intended to be a dynamic one, indicating not only present conditions but also prospects for changes in those conditions if no additional governmental action is taken.

The three variables are suggested as a basis for identifying target groups because they are key indicators of present well-being, potential for future well-being, and degree of commitment to particular localities in which projects might be undertaken.

At least three types of territorial orientation may be useful in this type of analysis: (1) externally oriented groups, where households or individuals are in an urban area primarily to generate income for consumption and investment elsewhere; (2) transit groups, where households or individuals intend to remain in the urban area in which

they are now located but are using the locality they are in merely as a staging area; and (3) consolidating groups, where households or individuals expect to remain for a relatively long period in the locality they are in.*

Factors such as employment status, income, and occupation are not used directly in this illustrative classification, because the main concerns are household consumption and capital assets. Employment and income are important, but here, they are regarded as means for achieving better life-styles rather than as ends in themselves. In situations where information on consumption and capital assets is not available, data on incomes and occupations might be used as proxy data for the purposes of classification. However, it is preferable to use consumption and asset data directly wherever possible.

POSSIBLE TARGET GROUPS

Both households and individuals are useful units for defining target groups on which projects are to be focused. The household is generally the foundation for individual survival and development and is an appropriate building block for a variety of project design purposes. The individual is an important unit for defining some poverty groups because specific types of individuals often have special needs.

Households

To identify the target groups relevant for a particular project, a profile might be constructed for each significantly different type of household. The types of consumption and the assets used to establish these profiles will depend on the types of projects under consideration.

Each profile could have three broad components: a consumption component, an assets component, and a territorial orientation component. The consumption component and the assets component may have subsidiary components, whose number and kind will depend upon the particular types of consumption and assets that are of concern. The territorial orientation component may have one of the three values suggested earlier: externally oriented, in transit, or consolidating.

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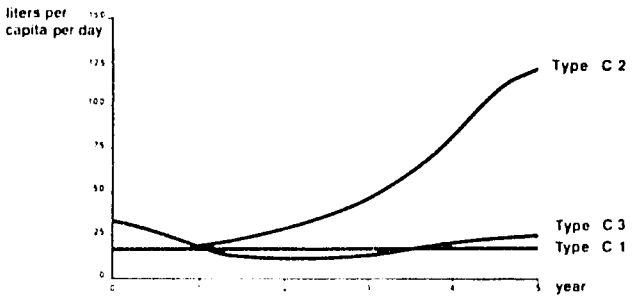
*There is nothing rigid about these orientations; they merely suggest potentially useful categories. Others may be appropriate in specific situations.

FIGURE 3.1

ILLUSTRATIVE AVERAGE WATER CONSUMPTION
(Liters per capita per day)

Household Type	Year 1	Year 2	Year 3	Year 4	Year 5
Type C 1	16	16	16	16	16
Type C 2	16	32	48	80	120
Type C 3	32	12	12	16	24



Source: Constructed by the author.

Consumption

The ability of a household to achieve a particular consumption level during a planning period may be a result of such factors as expected employment and incomes, attitudes and aspirations, and its political bargaining power. Profiles should also reflect the economic, social, and physical risks to which each household type is exposed. The levels of consumption incorporated in each profile should be values weighted to reflect such risks. For illustrative purposes, the simplified data in Figure 3.1 show the present and expected consumption of water for three hypothetical household types.

In the illustrative profile shown, households of type C.1 may be second-generation squatter households with only intermittent employment, no political power, no access to piped water, and a history of poverty that has left them with no expectation of being able to improve their condition.

In some cases, the areas in which such households live may be considered unimprovable or, to use the terminology of a recent typology of slums, human dust bins, where social and economic dropouts become stranded.[1] Households of type C.2 may be recently arrived in-migrants with at least one vigorous and semiskilled worker in each household and a good chance of obtaining steady employment.

They may also live in a stable locality, in which a modest water supply improvement project is already underway or committed. Households of type C.3 may be squatters who have previously stabilized their settlement and learned how to exploit existing services illegally. They are without much political power and are vulnerable to clearance projects. The dip in their profile may be a reflection of such things as an expected clearance project and/or periodic water shortages.

Assets

As in the case of consumption, only a few categories of present and expected assets will be illustrated. In all cases, assets are those expected at the end of the planning period in the absence of additional governmental action. Three types of assets will be discussed: the capacities of individuals in the household to enjoy a productive and full life, property rights, and access to credit.

Capacities of Household Members. The capacity to enjoy a productive and full life might be defined in a variety of ways. Because of the difficulty involved in creating sophisticated indices, the expected relative earning capacity per person will be used here as a crude proxy measure.

Relative earning capacity for a particular type of household might be defined as the relationship between the expected total earning per person and a desirable household target capacity per person. Judgments about expected earnings should reflect household size, age structure, and life expectancies at the end of the planning period. Judgments about a desirable household target capacity per person should reflect household size and age structure, life expectancies, and the earning capacities of individuals in the household at the end of the planning period if present trends continue.

Establishing the two measures proposed will be difficult. If plausible numbers can be generated, a relative earning capacity can be quantified. If this is not feasible, it may be possible only to rank households at the end of the planning period, as, say, likely to be close to full capacity, likely to be significantly but not dangerously below capacity, and likely to be dangerously below capacity.

Assuming for the purposes of illustration that relative earning capacity (REC) is quantifiable, three target groups might be classified as follows:

Household Type	REC at End of Planning Period
R.1	0.25
R.2	0.50
R.3	0.75

If the measure cannot be quantified, the symbols R.1, R.2, and R.3 might be used alone with qualitative descriptions of their meanings.

Property Rights. Data on households' fixed capital assets usually are not available; types of tenure are proposed here as proxies for more complete data on capital assets. Households might be classified in the four groups described below.

1. Households with no secure tenure and little or no ability to save—they usually do not have any significant marketable assets and no legal rights to land in the areas in which they are located.
2. Households of relatively secure squatters—these have no legal right to the land they occupy but, by virtue of their length of residence or political power, have a good chance of eventually obtaining legal rights to that land.
3. Households of tenants—these have either informal or formal rights as tenants in the space they occupy.
4. Households of owners—these have long-term leases, freehold rights, mortgages, or enforceable lease-purchase agreements.

Access to Credit. Household access to credit might be classified in three groups:

1. Households without access to credit—these have no means of obtaining credit for daily consumption needs, housing, or other purposes.
2. Households with access to informal credit only—these households are not considered credit-worthy by formal private institutions, such as banks or public agencies, but must borrow from informal moneylenders at very high interest rates or from relatives or friends.
3. Households with access to formal credit but with insufficient credit-worthiness—these have at least some ability to obtain limited credit from financial institutions but are not sufficiently credit-worthy to be able to obtain the levels of funding they need for adequate housing.

Territorial Orientation

As indicated earlier, three types of territorial orientation are proposed as an initial basis for differentiating target groups. The first type—externally oriented—consists of households located in urban areas only in order to send funds back to families or relatives elsewhere, usually in villages or rural areas. They expect to eventually return to the other areas themselves. They have no interest in investing to improve their condition in the area in which they are presently located. The second type—transit—consists of households in staging areas that are trying to gain a foothold in an urban area.

They hope to move on to more permanent locations when their incomes and their familiarity with urban conditions enable them to do so. They have little interest in investing permanently in the staging area in which they are presently located. The third type—consolidating—consists of households who have either established or expect to establish permanent residence in their present locations. Within whatever limited means they have, they intend to invest in and improve their own conditions there.

Even with the simple examples described here—three water consumption profiles, three categories of relative earning capacity, four types of property rights, three types of access to credit, and three types of territorial orientation—there are theoretically many possible categories of households. In practice, many possible combinations of characteristics are unlikely to occur. For example, a C.1 household (expected not to improve its water consumption during the planning period) is unlikely to have characteristics of significantly improved earning capacity at the end of the period, ownership, or access to formal credit.

Each possible combination may call for projects with different types of emphasis. A potentially mobile household is likely to need more sustained support than one that is already mobile. The needs of a household with no secure tenure will be different from those of squatters in well-established colonies and different again from those of legal title holders. The types of programs appropriate for a household disposed to invest in its neighborhood will be very different from those appropriate for households using the urban area only as a temporary base.

In the (later) chapters that discuss individual sectors, no attempt will be made to identify all of the types of projects suitable specifically for each of the potential household target groups. The criteria for classification suggested here are by no means complete or universally applicable. They are presented chiefly to illustrate a possible approach to the complex problem of differentiating target groups.

Individuals

An underlying aim of all development projects is to assist individuals to achieve their fullest possible potential. The household is an important target group because it is the functional unit that provides a foundation for individual development. However, there are likely to be types of individual needs that are independent of household characteristics; these will require projects focused on individuals rather than on households.

ASSEMBLY OF INFORMATION TO IDENTIFY TARGET GROUPS

A full discussion of survey techniques is beyond the scope of this book, but it is appropriate to review briefly procedures for obtaining the information for the identification of target groups.

The types of information required include present and projected population size; present and projected population age and sex structure; household characteristics, including household size, occupations of employed members of the household, educational levels of household members, nutrition and health of household members, and household incomes, consumption patterns, and expenditures (for the types of consumption identified earlier: food, water, sanitation, power, fuel, shelter, essential information, opportunities for satisfying social interaction, opportunities for enjoying a physical environment of high quality, and recreation); household assets, including expected earning capacity per person, property rights and the type and value of the housing occupied, savings (if any), and access to credit; and individual characteristics, including age, sex, and special needs.

There are three principal sources for such information: census and special sample survey data, data derived from aerial photography and selective field investigation, and data derived from field identification of target groups and selective field investigations within those target groups.

If censuses and special surveys are well designed, they will be the most reliable of the three sources discussed here, although not necessarily the most cost effective. Even special surveys usually require much longer to execute than the other two methods.

Census data generally do not include information needed on household consumption, household assets, household territorial orientation, or individual needs. These must be obtained from special sample surveys. In some countries, annual or even quarterly surveys of household income and consumption patterns will provide some of the data required. Data collection and processing may take up to six months or even a year for a city of 1 million people. The problems encountered in using survey results in the developing areas are well known. Sample designs must be examined carefully to determine the appropriateness of results in individual localities.

Interpretation of aerial photographs supplemented by selective field investigation was used recently with considerable success under difficult conditions in a city of approximately 600,000.[2] There are many variations; only the basic components of the procedure will be outlined here.

As a first step, aerial photographs of a city are prepared at a suitable scale if recent ones do not already exist. (A scale of 1:8,000 enlarged to 1:4,000 for analysis would be appropriate in most situations.) Second, the photographs are analyzed to identify a housing or settlement typology to provide a basis for subsequent field investigations of household characteristics. The identification of the housing typology itself will require field checking. In a city of 500,000, three skilled professionals should be able to identify an appropriate typology in about one week. Third, selective field surveys are conducted for each of the housing categories identified in the typology in order to get crude but usable information on total population, household size, household consumption, types of household assets, and household territorial orientations. If recent census data are available, total population estimates and household structure can be checked against them. If recent special sample survey data on consumption and other household characteristics exist, these, also, can be compared with the results of the field investigation based on interpretation of the photographs. This third step results in the identification of target groups. It might take something of the order of six to eight weeks with four skilled professionals in a city of 500,000.

Information on target groups obtained in this way will be cruder than that resulting from conventional sample surveys, but it is likely to be adequate for project preparation purposes, and it may take as little as two months to prepare, compared with the six- to 12-month period often required for conventional surveys.

Field demarcation of a housing typology supplemented by selective field investigation is similar to the second procedure, except that the original housing or settlement typology is identified by direct field investigation and mapping if aerial photographs cannot be obtained. The time required for the preparation of the typology will depend on the degree of precision sought. To obtain precision comparable to that achievable with aerial photography in a city of 500,000, presuming the availability of good base maps showing every street in the city, a team of four skilled professionals might require six to nine months, compared with the weeks needed for three professionals working from aerial photographs.

NOTES

1. J. J. van der Linden, "A Typology of Slums of Karachi" (Joint research project 4 for Urban Development and Slum Improvement), mimeographed (Karachi: Karachi University, Government of Pakistan, n.d. ca. 1975; Amsterdam: Free University of Amsterdam, Government of the Netherlands, n.d. ca. 1975), p. 108.

2. United Nations, Plan de Developpement de Port au Prince et de sa Region Metropolitaine, vol. 1, Plan d'Ensemble, Annex Methodologique (HAI/74/R-40) (New York: UN, 1976).

4

THE ROLE OF IMPACT ANALYSIS IN PROJECT IDENTIFICATION AND THE PROJECT DEVELOPMENT CYCLE

As projects are identified and developed in detail, they must be analyzed to see how they will affect the target groups that have been identified and to determine whether they are likely to achieve development goals. Impact analysis is a tool for this purpose.

If the approach suggested in Chapter 2 is adopted, the following types of impact are likely to be of concern.

IMPACT ON GOALS RELEVANT TO THE URBAN POOR

The concern here will be with the impact of a project on current consumption and assets of the kinds discussed in Chapter 3 for each of the target groups that is of interest and on the risks likely to be associated with the project.

IMPACT ON GOALS RELEVANT TO OTHER TARGET GROUPS

In selecting projects intended to benefit the urban poor, priorities for the poor should be related to overall national priorities. It will therefore be necessary to consider the impact of a project on national objectives and concerns, such as gross domestic product (GDP), aggregate savings and investment, the balance of trade, external debt, and political independence, and on the achievement of goals for individual target groups other than the urban poor.

Many projects for the urban poor will not be of types or sizes that will have a significant impact on national concerns of the kinds just mentioned, but almost all will have an important impact on groups

other than the poor. (For example, the improvement of an existing low-income settlement may increase property values in neighboring areas; the expansion of formal credit may reduce profitability in the informal credit system; and the improvement of health and educational services for low-income groups may increase not only their incomes but also the profitability of production for the owners of the enterprises in which they are employed.)

The particular types of consumption and capital accumulation that are given priority for other groups are likely to be different from those for urban poverty groups. They also are likely to differ from one urban area and country to another. It is difficult to anticipate the specific goals that will be given highest priority in individual situations, but the other effects—both positive and negative—that are likely to be important should be identified explicitly. The political feasibility of a project intended primarily for the poor may depend on its impact on other groups.

INTERMEDIATE PROJECT PURPOSES

A project's expected impact on basic goals is the ultimate concern in deciding whether or not to implement it. However, those goals usually can be achieved in a variety of ways. In the present discussion, the expected impact of a project on the supply of and/or demand for essential goods and services through which basic goals are to be pursued are referred to as the project's intermediate purposes, to distinguish them from its goals, which have to do with changes in consumption or the accumulation of assets.

Although it is desirable in principle to identify the expected impact of a project on ultimate consumption or asset accumulation, data limitations frequently preclude this. In such cases, the decision maker may have to be satisfied with an analysis of the expected impact on the supply of relevant goods and services as a basis for a go or no-go decision. Intermediate project purposes, as well as sector and project goals, are identified in the sector-specific tables presented in the following chapters.

IMPACT AGENTS AND INSTRUMENTS

Natural resources, manmade goods and services, and institutional mechanisms are the means through which a project's impacts are achieved.

The individuals and entities who influence project impacts will be referred to here as impact agents. They may be individuals,

TABLE 4.1

Potential Flows of Cash, Goods, and Services among Impact Agents Relevant to the Urban Poor

Agency	International Agencies	National Government	State/ Provincial Government	Local Government	Formal Sector Enterprises (Domestic and Foreign)[a]	Informal Sector Enterprises[b]	Social Organizations (Domestic and Foreign)[c]	Other Urban Households	Low-Income Urban Households
International Agencies	—	Loans, grants, and guarantees	—	—	Payments for purchases and loans	—	Loans, grants, and fees	—	—
National government	Counterpart commitments, principal and interest payments, and fees[d]	—	Loans, grants, guarantees, technical assistance and land facilities and services	Loans, grants, guarantees, technical assistance, and facilities and services	Payments for purchases, loans, grants/subsidies guarantees, technical assistance, tax/other incentives and controls, and facilities and services	Payments for purchases, loans, grants/subsidies, guarantees, technical assistance, tax/other incentives and controls, and facilities and services	Loans, grants/subsidies guarantees, technical assistance, tax/other incentives and controls, and facilities and services	Loans, wages, and facilities and services	Loans, wages, grants/subsidies, technical assistance, tax/other incentives and controls, and land, facilities and services
State/provincial government	—	Counterpart commitments, principal and interest payments, and tax sharing	—	Loans, grants, guarantees, technical assistance, and facilities and services	Payments for purchases, loans, grants/subsidies guarantees, technical assistance, tax/other incentives and controls, and facilities and services	Payments for purchases, loans, grants/subsidies, guarantees, technical assistance, tax/other incentives and controls, and facilities and services	Loans, grants/subsidies guarantees, technical assistance, tax/other incentives and controls, and facilities and services	Loans, wages, and facilities and services	Loans, wages, grants/subsidies, technical assistance, tax/other incentives and controls, and land, facilities and services

Local governments	—	Counterpart commitments, principal and interest payments, and tax sharing	Counterpart commitments, principal and interest payments, and tax sharing	—	Payments for purchases, tax/other incentives and controls, and facilities and services	Payments for purchases, tax/other incentives and controls, and facilities and services	Tax/other incentives and controls, and facilities and services	Wages and facilities and services	Wages, technical assistance, tax/other incentives and controls, and facilities and services
Formal sector enterprises (foreign and domestic)	Services and principal and interest payments	Services, principal and interest payments, taxes, and fees and user charges	Services, principal and interest payments, taxes, and fees and user charges	Services, taxes, and fees and user charges	Payments for purchases and goods and services	Payments for purchases and goods and services	Payments for purchases, goods and services, and loans[e]	Wages, goods and services, and loans	Wages, goods and services, and loans
Informal sector enterprises	—	Goods and services, principal and interest payments, taxes, and fees and user charges	Goods and services, principal and interest payments, taxes, and fees and user charges	Goods and services, taxes, and fees and user charges	Goods and services and payment for purchases	Goods and services and payments for purchases	Goods and services	Goods and services	Wages, goods and services, and loans
Social organizations (domestic and foreign)	Principal and interest payments and services	Principal and interest payments, taxes, and fees and user charges	Principal and interest payments, taxes, and fees and user charges	Taxes and fees and user charges	Goods and services, payments for purchases, and principal and interest payments	Payments for purchases	Payments for purchases, loans, and principal and interest payments	Wages and goods and services	Wages, goods and services, grants/subsidies, loans, and technical assistance

(continued)

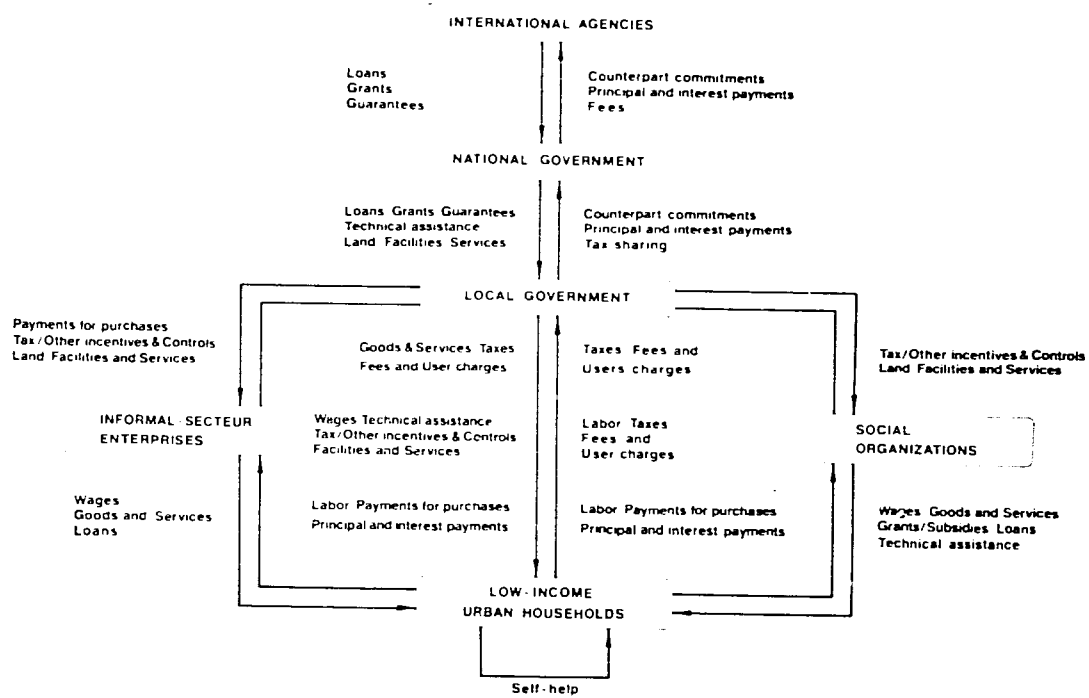
Table 4.1 continued

Agency	International Agencies	National Government	State/ Provincial Government	Local Government	Formal Sector Enterprises (Domestic and Foreign)[a]	Informal Sector Enterprises[b]	Social Organizations (Domestic and Foreign)[b]	Other Urban Households	Low-Income Urban Households
Other urban households	—	Principal and interest payments, labor, taxes, and fees and user charges	Principal and interest payments, labor, taxes, and fees and user charges	Labor, taxes, and fees and user charges	Labor, payments for purchases, and principal and interest payments	Payments for purchases	Labor, payments for purchases, and donations	Self-help	Goods and services, wages, and gifts
Low-income urban households	—	Principal and interest payments, labor, taxes, and fees and user charges	Principal and interest payments, labor, taxes, and fees and user charges	Labor, taxes, and fees and user charges	Labor, payments for purchases and principal and interest payments	Labor, payments for purchases and principal and interest payments	Labor, payments purchases and principal and interest payments	Payments for purchases[g] and labor	Self-help

[a]Including banks and other financial institutions and consultants.
[b]Including informal sector financial entities.
[c]Including cooperatives, private aid organizations, religious groups, and so forth.
[d]For example, where Organization of Oil Exporting Countries (OPEC) pay for technical assistance.
[e]For example, employers' loans to worker cooperatives.
[f]Intergovernmental and interentity cooperation and coordination are presumed as possible flows of services but are not shown explicitly.
[g]For example, where low-income households purchase or steal water from middle and upper-income households.
Source: Compiled by the author.

FIGURE 4.1

ILLUSTRATIVE SECTION OF AN IMPACT NETWORK



Source: Constructed by the author.

households, social organizations, governmental agencies, international agencies, and formal or informal enterprises. A recognition of potential impact agents, the instruments available to them, and the interrelationships among them (that is, the networks through which their influence may occur) is important as a basis for project design and execution.

Potentially, impact agents in projects for the urban poor and the principal flows of cash, goods, and services involved are identified in Table 4.1. The network through which these flows may occur are implicit there. A part of one such network is shown in Figure 4.1.

Although Table 4.1 is illustrative rather than exhaustive, it should be useful as a starting point in thinking about components that should be incorporated in projects and in specifying requirements for project assistance.

IMPACT LINKAGES

The potential flows of cash, goods, and services identified in Table 4.1 suggest relationships that will be important in undertaking a project. However, knowledge of the economic, social, and political variables through which they are likely to be affected is also necessary. For example, to decide how to design a project to improve water consumption by low-income households, it is necessary to have information on household incomes and consumption preferences; the existing level, quality, and pricing of the water supply to target households; and the technical options for providing improved supplies of water. In other words, it is desirable to have an analytical model—whether simple or sophisticated—of the variables and relationships that determine levels of water consumption by target households.

The specification of even the major variables and relationships relevant for each project type identified in this book is beyond its scope. It is presumed that the detailed knowledge necessary for their specification will be available through the technical staff of governmental agencies and/or specialized consultants. The need to analyze impact linkages of these kinds is mentioned chiefly as a reminder of the importance of having such skills and knowledge available.

QUANTITATIVE AND QUALITATIVE IMPACT AND INTERPERSONAL COMPARISONS

If all impacts could be reduced to a single dimension, as in the case of economic analyses in which profit maximization is the only goal, the task of impact analysis would be relatively simple. In

practice, some potential impacts will be easily quantifiable (for example, the change in household income likely to result from the creation of a particular job opportunity). Others will be less directly quantifiable (for example, the psychological benefits gained from a new settlement that provides increased opportunities for social interaction—although this might be quantifiable, in principle, through measures of the prices households would be willing to pay to locate in the new settlement). However, even with readily quantifiable impacts, the task of assessing them is by no means simple if they relate to different individuals or households.

In the present discussion, it is presumed that it will almost always be impossible to reduce impacts to a single dimension. Therefore, the best that can be done is to organize listings of the various types of expected quantitative and qualitative impacts and identify the particular target groups likely to be impacted. These listings can then be used by technicians as an explicit basis for their recommendations and by policy makers as an explicit basis for their final decisions on project implementation. The important thing is to identify all of the truly important impacts explicitly, even though they cannot be quantified.

SIGNIFICANCE AND INSIGNIFICANCE

Impact identification requires time and effort. Delays in decisions may have very high opportunity costs. It therefore is essential to focus as quickly as possible on truly significant impacts and ignore the rest. Two points of caution are appropriate in relation to this.

First, a number of individually small impacts may together result in a major impact. For example, modest improvements in local sanitation, coupled with minimal health services and a very basic educational program, may together be sufficient for some individuals to be able to reach a threshold from which they can improve their own condition dramatically. Second, the significance of an individual impact will depend on the context in which it occurs. For example, a small change in water treatment processing may be sufficient to trigger the virtual elimination of pathogens.

TIMING OF IMPACTS

An identification of the time at which an impact will occur is important. It frequently will be necessary to select projects with a rapid impact. Many of the urban poor live on the brink of disaster in conditions that require projects to have very early, even if modest,

payoffs. The timing of its impact may be a major factor in deciding whether or not a particular project should be selected.

Combined impact patterns resulting from different projects over time must also be considered. Limited early impacts may mature into major benefits later, either alone or in combination with other projects. For example, introducing small local stabilization ponds may trigger algae or plant growth. As a result, fish may flourish, plants may be used for fodder, and so on. Decision makers should be alert to possible long-term multiplicative, as well as sometimes cyclical, effects.

DEALING WITH UNCERTAINTY

Varying degrees of uncertainty will be attached to all project analysis. In the process of analyzing expected impacts, this uncertainty should be made explicit. The analyst should attempt to identify the degree of uncertainty of impacts (quantitatively, using conventional probability measures, or qualitatively).

DYNAMICS OF IMPACT ANALYSIS

Impact analysis in project identification, initial project review, project preparation, project appraisal, and subsequent evaluation should be an important source of feedback. In particular, at the project identification, initial project review, project preparation, and project appraisal stages, it may lead to unexpected findings and require revisions in project components. It may also lead to changed judgments about the complementary actions necessary for effective project implementation.

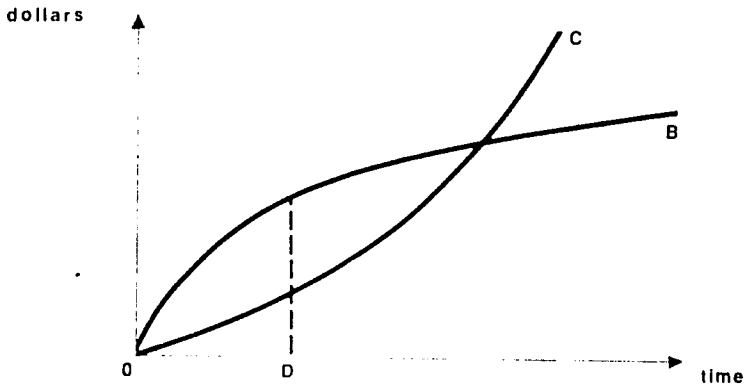
ECONOMICS OF IMPACT ANALYSIS

The analyst should recognize the direct and indirect costs of analysis and weigh them against potential gains from further analysis. The additional discovery of unanticipated impacts may be valuable, but there is a point at which increasing refinements may yield very little additional benefit. The situation is illustrated simply in Figure 4.2.

Although some benefits from undiscovered findings are impossible to know, the increased costs of inaction may be more readily identifiable. It will usually be possible to consider a reasonable number of project alternatives and identify at least one that yields

FIGURE 4.2

BENEFIT AND COST CURVES FOR A HYPOTHETICAL IMPACT ANALYSIS



C Indicates expected aggregate costs of delays at each point in time.

B Indicates expected aggregate benefits of analysis at each point in time.

D Indicates the time at which the decision should be taken in order to maximize the benefits of the analysis.

Source: Constructed by the author.

the highest acceptable net benefits. At that point, the potential costs of inaction should be weighed carefully against the benefits that may result from additional analysis, and a judgment should be made as to whether further analysis is likely to be justifiable.

PARTICIPATION IN IMPACT ANALYSIS

Various levels of sophistication are achievable in impact analysis. However, in the field conditions for which the guidelines in this book are designed, much of the analysis will have to be based on informed judgment aided by quantitative and qualitative material of the kinds in the following chapters.

Because of this, it is important for the analyst to enlist the judgments of informed laymen, technicians, and policy makers. The

direct involvement of poverty groups themselves is likely to be one of the most valuable sources of impact information.

PROJECT DEVELOPMENT CYCLE

Impact analysis is used at several stages in the project cycle. It is useful to review briefly the full cycle of activities involved from the inception of a project idea to project execution and evaluation. The steps followed (at least in principle) by many governments and aid agencies are shown in Figure 4.3. The principal features of each step will now be discussed briefly.

Projects usually originate with the identification of a problem considered to be important in relation to development goals. It is at this stage that target groups and their needs should be identified, as discussed in Chapter 3.

In most situations, there will be some form of national plan, as well as perhaps regional, state, and local plans, to which individual projects should be related. Those plans may themselves identify problems that lead to project formulation—for example, where regular reviews of progress result in the identification of shortfalls. If problems are identified independently, current plans should be consulted to establish projects consistent with overall program goals and to identify the constraints that will affect project formulation.

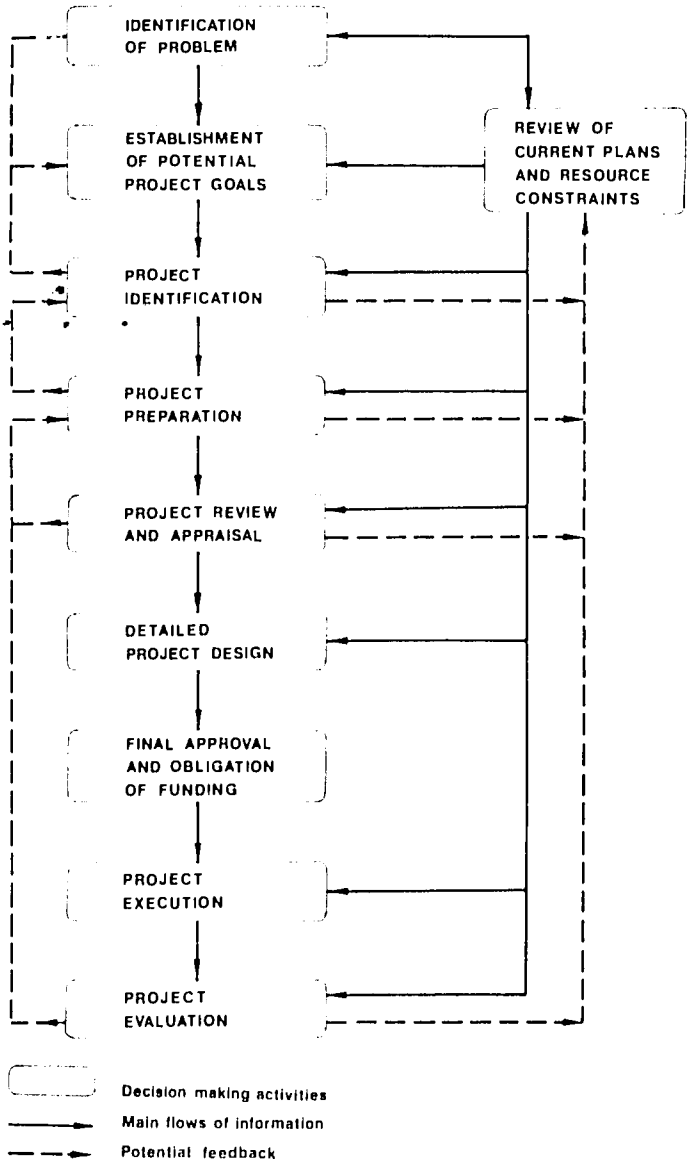
Explicit project goals will be needed to compare project alternatives systematically. They will also provide a basis for establishing the criteria on which project reviews, appraisals, and evaluations should be based. As indicated by the feedback lines shown in Figure 4.3, the goals identified at the inception of a project may be subsequently modified by other activities in the project cycle. The types of goals appropriate for projects to benefit the urban poor were suggested in Chapter 2.

In the next step, project identification, the broad features of a potential project, including a crude analysis of its expected impact on target groups, are identified. Project identification usually will involve a consideration of possible alternatives and should result in the selection of one or more for which more complete elaboration appears worthwhile. The level of project definition that is appropriate at this stage will vary with the agencies involved.

At the preparation stage, the project (or major alternatives) should be developed sufficiently to indicate how it is to be implemented, and its expected costs and benefits should be identified. This implies a relatively thorough analysis of the project's impact on key target groups. The sector and project tables in the following chapters suggest some of the major types of impact (benefits and negative effects)

FIGURE 4.3

SYNOPSIS OF A TYPICAL PROJECT CYCLE



Source: Constructed by the author.

that might be considered. The project preparation step should permit the tentative approval or rejection of the project by the governmental agency or international agencies concerned.*

The step of project review and appraisal is the step through which a basic go or no-go decision is made. A go decision at this stage is usually tentative. Rejection at this stage should be unlikely if project identification and preparation have been undertaken properly. The possibility of reformulation is indicated by the feedback indicated in Figure 4.3.

Detailed project design should be undertaken only after a go decision has been made. It should include a definitive description of the project, together with final cost estimates and a specific implementation program. This requires an identification of detailed responsibilities for implementation. It should also include a program for subsequent project monitoring and evaluation. It will provide a basis for final project authorization, the mobilization of resources for implementation, and the disbursement of funds.

Final approval and obligation of funding will typically follow the detailed project design stage, if that has been executed properly and if funding and other resources are available.

The next step, project execution, consists of the full sequence of activities through which a project is brought to fruition, including physical construction, the provision of related services, the institution of relevant policy measures, the execution of necessary complementary actions in related sectors, and the initial utilization of the goods and services generated through the project for its intended beneficiaries.

Finally, because project execution is fraught with uncertainty, it is desirable to establish systematic project evaluation procedures through which actual results can be compared to expected results. Evaluation is likely to lead to feedback of several kinds, as indicated in Figure 4.3. It should be based on criteria derived from the original project goals and other criteria that may have been established subsequently. The specific requirements for evaluation vary from agency to agency.

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*Project approval at this stage is usually tentative and contingent upon the subsequent availability of funding, detailed project design requirements, and the fulfillment of other preconditions for project implementation.

II

POTENTIALLY IMPORTANT TYPES OF PROJECTS— A PRELIMINARY SELECTION

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INTRODUCTION

The purpose of Part II is to provide basic information on a preliminary selection of sectors and project types likely to be especially important in benefiting the urban poor.

Each chapter in Part II deals with projects of a different type. Most chapters cover a single sector, such as housing, or a set of functionally related sectors, such as water supply and sanitation. One chapter deals with overall public management and finance, which are not sectoral in the usual sense, since they have to do with such things as land management and taxation. The management and financial aspects of sectoral projects are treated in the individual chapter that deals with each sector. The concluding chapter discusses the intersectoral links that should be recognized in dealing with projects in individual sectors and potential links between urban and rural projects.

Each chapter is organized into six sections:

1. The role of the sector in development and its importance for the urban poor: material in this section of each chapter identifies the ways in which projects in a particular sector or group of sectors can be expected to contribute to overall economic and social development—in particular, the ways in which such projects can be expected to benefit the poor in urban areas.

2. Policy implications: individual projects often cannot be fully effective in benefiting the poor unless they are supported by appropriate basic policies (which may also have an impact on groups other than the poor). For example, projects that are intended to incorporate labor-intensive technologies for manufacturing, construction, transportation, or other activities are unlikely to be fully effective if national import regulations, industrial incentives, and minimum wage laws make capital artificially cheap. This section of each chapter identifies some of the major types of policies that it is desirable to have established if the types of projects dealt with in the chapter are to be as beneficial as possible. In some cases, the distinction between a policy implication and a complementary action that may be needed (see section in each chapter on Complementary Actions That May Be Necessary) will not be a clear-cut distinction. In general, complementary actions will be used to refer to activities necessitating the undertaking of specific types of projects in sectors other than the one under discussion. Policy implication will be used to refer to policies that affect the supply, pricing, and/or consumption of services in the

sector under discussion (and possibly in other sectors); these policies may or may not require the undertaking of projects in other sectors.

3. Projects with a potentially high impact: this section identifies for the sector or subject area covered by the chapter some of the major types of project that are likely to have a highly beneficial impact on the urban poor. It indicates the types of impact that can be expected, including negative as well as positive effects, if these are likely to be significant, as well as the types of poverty group most likely to be affected. As a general rule, projects of types that are simple to implement and that yield benefits early are discussed first. In most situations, it will be important to take action and achieve results quickly—while projects with long gestation periods are being initiated.

4. Institutional aspects: this section discusses the management and financing of projects of the types dealt with in the chapter. It discusses also the potential for participation in project planning, financing, and implementation by the poor themselves. In chapters in which these matters are best dealt with in the material on individual types of projects the separate section on Institutional Aspects is omitted.

5. Complementary actions that may be necessary: in addition to the best basic policies that may be desirable to support particular types of project (policies that will be dealt with in section on Policy Implications), some types of project may call for action in sectors other than their own if they are to be fully effective. For example, projects in water supply and sanitation that provide an opportunity for the reuse of urban wastes may call for concurrent project development in agriculture. This section attempts to identify at least the major types of complementary action that may be desirable with particular types of projects.

6. Other likely impacts: projects intended partly or primarily to have an impact on the urban poor may also have an impact on other groups directly (for example, where improvements in a low-income area lead to increases in land values in an adjacent middle-income area) and/or indirectly, through their impact on overall local, regional, or national development (for example, where they have an impact on revenues or imports and exports). Decisions on the desirability or undesirability of a project should take into account these other impacts, as well as impacts on the urban poor, if those decisions are to be integrated with broader economic and social development decisions. This section attempts to identify the kinds of broader impact that it may be important to consider.

5

PROJECTS TO INCREASE EMPLOYMENT AND PRODUCTIVITY

ROLE OF PROJECTS FOCUSED ON EMPLOYMENT AND PRODUCTIVITY

An increase in employment and productivity is important for major improvements in the consumption and assets of low-income households. In many cases, it is also a prerequisite for improvements in public services for the poor, if low-income households are to be charged economic prices for these services.* A fundamental part of any strategy to benefit the poor must therefore include projects that will achieve increased employment levels. There must be a concern not only with employment levels but also with the quality of employment and the income it generates.

Opportunities to increase both the employment and productivity levels of low-income, low-skilled groups exist in a number of sectors, including various types of manufacturing, retailing, construction, transportation, sanitation, and, in some situations, agriculture close to urban areas.

At least four possible purposes should be borne in mind in undertaking projects in these sectors when the main concern is to benefit low-income groups: (1) increased employment, (2) increased

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*As will be seen later, it may be possible to achieve increased consumption by decreasing rather than increasing the unit costs of some services for the poor (in water supply, for example, when low-income households previously have had to buy water from private vendors).

TABLE 5.1

Illustrative Relationships among Selected Factors Affecting Low-Income Employment and Productivity

Categories	Factors Exerting Effect	Other Factors Affected																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Low-income employment and productivity	Increased low-income employment (1)					+																			
	Increased low-income productivity (2)					+																			
Demand	Increased exports (3)	+									+														
	Increased import substitution (4)	+									+														
	Increased low-income domestic demand (5)	+									+														
	Increased other domestic demand (6)	+									+														
	Increased governmental demand (7)	+									+														
Technical factors	Reduced export prices (8)			+																					
	Reduced domestic prices (9)					+	+	+																	
	Increased other employment (10)						+																		
	Increased other productivity (11)						+																		
	Changes in technology (12)	+									+														
	Motivation and aspirations of the poor (13)		+																						
Exogenous factors	Exogenous changes in export demand (14)			+																					
	Population growth (15)					+	+	+																	
Policy instruments	Improved low-income services (16)		+					+						+											
	Selective tax changes (17)					+	+	+						+											
	Selective changes in service charges (18)					+	+	+						+											
	Domestic borrowing (19)						+	+										+	+						
	Foreign borrowing (20)							+										+	+						
	Policies affecting competitiveness (21)								+	+															
	Credit policies (22)												+	+											
	Labor policies (23)												+	+											
	Export and import policies (24)			+																					

Source: Compiled by the author.

productivity and income per worker, (3) an increased supply of consumption goods and assets that meet the specific needs of low-income groups, and (4) achievement of a sense of purpose and a capacity for self-improvement among low-income laborers and entrepreneurs. The achievement of the fourth of these purposes undoubtedly depends to some extent on the achievement of the first and/or second purposes. It is nevertheless one of the most important. If a project generates income for a few months or even a year but fails to establish a capacity for continued self-improvement, it is likely to have done little of real significance.

To sustain projects designed to increase employment, a continuing demand must exist for project output. That demand may be external (export) demand, domestic private demand, or domestic demand generated by the government. Increased demand may result from such factors as international market conditions or population growth, which are largely beyond governmental control. It may also result from reductions in prices and/or consumer preferences.

Changes in the productivity of the poor may result also from the following: changes in technology; improvements in services, such as water supply, sanitation, health, and education, which increase productivity directly; and changes such as an increase in the availability of credit or price decreases, which increase motivation and thereby influence productivity indirectly.

Among the most important instruments for bringing about increases in employment and/or productivity are those associated with policies that affect levels of demand, choices of technology, and/or individual productivity. The types of policy that are of special importance include export and import policies, labor policies, domestic credit policies, policies which affect the competitiveness of individual industries, foreign and domestic borrowing policies, policies concerning user charges for public services, basic taxation policies, and policies concerning the delivery of essential services to the poor. Action at the policy level will often be at least as important as achievement at the project level; frequently, it will be a prerequisite for it.

Table 5.1 summarizes typical relationships among selected factors that affect employment and/or productivity. The table is not complete in either the factors identified or the relationships it shows. Its purposes are the following: (1) to point up the importance of basic policy instruments, as well as individual projects; (2) to illustrate the importance of a sustained demand for project output; (3) to summarize the interdependence of low-income and other groups; and (4) to identify typical relationships among factors affecting low-income employment and productivity so that they can be kept in mind when individual projects are designed.

During the 1950s, many developing countries became convinced that rapid industrialization would be the best means of providing employment for their expanding labor forces. The results of strategies focused on modern industry have been disappointing. While manufacturing output in developing countries increased by about 7 percent during the 1955-65 period, labor absorption in the manufacturing sector increased by only 4 percent.[1] Moreover, evidence suggests that the capacity of manufacturing to absorb labor actually declined during the 1960s. This tendency was clearest in Latin America, where employment in manufacturing grew by 6.8 percent during 1965-66 but by only 1.3 percent in 1968-69.[2]

Large-scale enterprises associated with high growth are sometimes effective instruments for providing employment and income to the poor. There is no evidence that large-scale industries are universally efficient users of factor inputs. On the contrary, research in Pakistan, Colombia, India, and elsewhere has shown that medium-sized firms are often the most efficient in their use of scarce capital resources, even if at somewhat lower standards of labor productivity.[3] Nevertheless, industrial policies in most developing economies tend to favor large-scale, capital-intensive investments and discriminate against small- and medium-scale enterprises, which could provide more employment per unit of output. Financial institutions also have tended to discriminate against smaller enterprises in the allocation of investment funds and working capital. In addition, small enterprises have special difficulty in obtaining access to essential infrastructure and in coping with bureaucratic regulations and controls.

The unsatisfactory experience of the past should not result in a neglect of large-scale enterprise as a source of employment for low-income groups. Scale, in itself, may not be the key factor. Labor intensity and productivity should be the basic concerns.

POLICY IMPLICATIONS

A number of policy measures can be used to influence the choices of technology used by enterprises (and that stimulate the growth of employment). Because so many technology decisions are made by private enterprises, it is important for cost factors in production to correspond as closely as possible to their costs to society. Too often, the prices of imported capital equipment, labor, and financing do not correctly reflect their opportunity costs. The adoption of appropriate policies at the national level can hardly be overstressed.

Tariff and exchange rate policies may affect the type of technology adopted. Many countries have granted tariff concessions on capital equipment that have contributed to the relative profitability of capital-

intensive investments. Overvalued exchange rates and import licensing have also contributed to this phenomenon. A comprehensive review of the investment impacts of foreign trade policies will be necessary in many cases. Fiscal and credit policies also have frequently encouraged capital-intensive development. Large investments are sometimes given tax holidays, and highly capitalized investments are made eligible for low-interest financing.

To the extent that labor policies make the hiring of labor disadvantageous to employers, capital intensity is encouraged. Thus, minimum wage policies, high social security contributions, premature union pressures, regulations against night work and double shifting, and labor laws making it unreasonably difficult to dismiss employees all contribute to raising the cost of labor above its social opportunity cost. Politically responsive governments cannot be expected to reduce wages. However, care should be taken to avoid expanding the (usually union) worker elite at the expense of the still unemployed. Labor surplus countries should deemphasize minimum wage laws, restrictions against night employment, and other regulations that discourage the use of additional labor. Social security pensions and medical insurance might be financed out of general taxation rather than out of employers' contributions, since these contributions increase the effective cost of labor to enterprises.[4]

In some countries, traditional import-substitution industries may have reached the growth limits set by small internal markets. In these countries, outward-looking industrial policies may be developed gradually by removing protective tariffs, quotas, and other restrictions to encourage industries to become more competitive internationally. A liberalization of imports and exchange rates might stimulate greater local efficiency and facilitate the importation of primary and semiprocessed goods for reexport. Several labor-surplus economies have successfully implemented such policies, most notably, the People's Republic of China and the Republic of Korea. In many countries, outward-looking growth policies may be tempered by the desire not to become too dependent on developed country markets. These countries may wish to devote greater energies toward developing enterprises appropriate for low-income domestic markets.

PROJECTS WITH A POTENTIALLY HIGH IMPACT ON THE URBAN POOR

Intensive agriculture in or near urban areas, manufacturing, retailing, construction, transportation, and environmental sanitation are among the sectors that provide many opportunities for projects that increase employment and productivity for low-income groups.

Projects in several of these sectors are discussed from a service-delivery point of view in other chapters. Attention in this chapter is focused on their impact on employment and productivity.

To simplify the presentation, projects will be grouped in four categories, each calling for somewhat different types of governmental action:

1. Projects based on individual private enterprises
2. Cooperatives
3. Training outside individual enterprises and other measures designed to increase productivity
4. Direct hiring by government

Each type of project might be undertaken in all sectors, although Type 4 projects tend to be concentrated in the sanitation, transportation, and construction sectors in nonsocialist systems.

In each category, individual sectors will have very specific project requirements, which are too numerous to be described in overall guidelines of the kind presented in this book. Project identification and preparation for each sector require specialized skills. Only a broad characterization of project features is presented here.

Projects Based on Individual Private Enterprises

This category includes projects in enterprises with a single entrepreneur, projects to support small corporate entities, and projects to support large-scale enterprises using labor-intensive technologies.

Support for private enterprises may require assistance of some or all of the following kinds: credit; technical assistance in market analysis, production planning, budgeting and accounting; selection of a location; provision of space and/or technical assistance in the construction of space; technical assistance and funding for the selection and purchase of equipment and supplies; technical assistance in modifying existing technologies in production and in quality control; provision of essential infrastructure; technical assistance in marketing; and technical assistance and/or funding to support training undertaken by individual enterprises or private-sector training programs. The scales of support needed might range from assisting the owner-manager in basic bookkeeping to assisting a large enterprise in the development of modern worker-training procedures.

A strategy to support private enterprise through the types of assistance suggested above should be concerned with the creation of new entrepreneurial activity and job opportunities that would not be

available without support (for example, the inducement of established entrepreneurs to expand labor-intensive activities or launch new product lines that they would not otherwise risk). It should also encourage existing activity by entrepreneurs to increase productivity, as well as to open up additional job opportunities. In the latter case, for example, it will often be desirable to encourage rather than discourage joint use of space for residential as well as small manufacturing, trade, or service functions. Existing food and general markets or bazaars provide another fertile ground for support to small enterprises that can also help to improve the consumption of essential items.[5]

The manufacturing sector is perhaps the best-recognized area of opportunity for such project assistance, but other sectors may have overlooked potential. The reuse of urban wastes, for example, may give rise to new opportunities for small-scale enterprises in intensive agriculture close to urban areas.

Small-scale retailing, even down to the scale of street vending, is a relatively unexplored territory for public support, even though it is a large employer in most urban economies. Indeed, vending and similar activities are often mistakenly regarded as nuisance activities that should be discouraged. A more constructive approach would recognize the long-term role of small-scale trade and service activity and the opportunities they provide. To assist such activity, it may be useful to provide minimal infrastructure (such as dry, paved spaces for vending, public water supply, basic night lighting, and adequate refuse collection). Also, it may be possible to provide credit support to supplant the private borrowing of working capital at exorbitant interest rates.

The construction sector frequently undergoes rapid growth and is a sector that provides relatively easy entry at a small scale. It is not uncommon to find even low-income households paying small contractors to build basic housing. Labor productivity in this sector might be increased at the same time as the quality of the product delivered to low-income households is improved through modest funding and technical assistance to small-scale contractors. The types of technical assistance likely to be useful include assistance in costing, materials purchases, work scheduling, construction techniques, and credit financing. There are also opportunities to increase employment and productivity through direct hiring in the public sector, which are referred to in Type 4.

In analyzing the formal construction sector in developing countries, Turin suggests that its major features include heavy dependence on imports of building materials and components, almost total dependence on imports for plant and tools, high transportation costs for both local and imported building materials, and dependence on foreign

skills, both technical and managerial, at least in the least-developed countries.[6] Turin notes that most developing countries devote a considerable effort to modifying this pattern through import substitution, education, and training. He also suggests that the building materials industry—except for cement, glass, and some finished products derived from the metallurgical industry—is traditionally made up of numerous small production units and does not attract sufficient attention in national economic development plans or in the project approaches favored by major international and bilateral aid agencies.

The traditional transportation sector is worthy of consideration for support from an employment and productivity point of view for two reasons: it is labor intensive, and increases in efficiency in transportation can have favorable productivity repercussions throughout a local economy. Reductions in transportation times and increases in the dependability of services can mean lower labor fatigue, more productive management, and reduced product losses through pilferage and spoilage. Project assistance may be worth considering for a number of types of small-scale transportation (animal-drawn vehicles for goods and passengers, auto and bicycle rickshas, and so forth), as well as in more conventional forms of transportation. Moreover, in choices of technology for large-scale mass transportation, the employment and labor productivity characteristics of alternative modes should be given an important place, along with capital costs, operating costs, and service characteristics. The types of assistance necessary from an employment and productivity point of view in small-scale transportation include technical assistance to improve vehicle design, credit for owner-operators, simplification of licensing procedures, and assistance to obtain materials and equipment for maintenance purposes.

Environmental sanitation often can be highly labor intensive. In addition to its impact on employment, improved sanitation, together with improvements in water supply, can be a major contributor to improved health and productivity. Proposals to modernize all aspects of sanitation through capital-intensive technologies should be treated with caution. Although it is necessary to upgrade services in most urban areas in the developing countries, this need not mean massive application of sophisticated capital equipment for sewage treatment plants, prestressed piping, mechanized refuse trucks with compactors, and the rest. On the contrary, if managed properly, street sweeping and solid waste removal can be undertaken through highly labor-intensive techniques. In some situations, perhaps even sewage collection and disposal can continue to be relatively labor intensive and/or low in capital cost. For example, better-managed night soil collection with reuse of excrement for agriculture may be a reasonable solution when public resources are severely constrained. Environmental sani-

tation is often considered to be exclusively a public sector activity, but it is mentioned in this section because there are many situations in which solid waste handling, and even sewage, can be dealt with more efficiently in the private sector. An example of a cooperative for solid waste handling is cited in Type 2.

Because of the variety of projects that might be undertaken, the time required for beneficial impacts to be felt may range from almost immediately to several years. The provision of new credit for small and/or labor-intensive enterprises may swell employment very quickly when that credit is used for working capital. On the other hand, the introduction of improved construction techniques may take a year or more.

The variety of project opportunities available suggests that many target groups among the urban poor are likely to benefit if projects are well conceived. However, these projects may have little impact on those who are unemployable because they are especially deficient in skills and motivation. This problem may require special measures that cannot easily be provided through assistance to private enterprise alone.

The following examples of projects involving individual enterprises in the private sector illustrate the types of action that may be appropriate.

Projects Involving Individual Enterprises

Worker-managed enterprises are emerging in Peru and Chile, as well as elsewhere in Latin America, as a significant alternative form of industrial organization.[7] This alternative integrates labor, ownership, and control in an unprecedented manner. Worker organizations in Chile attempted to obtain state industries offered for sale to the public—15 to 25 enterprises were projected to be transferred to the worker self-manager sector. Internal structures are similar to the Yugoslavian system, with numerous worker committees at various levels of the firm. Greater emphasis has been placed upon social education than was originally the case in Peru.

Within this context, a factory in a Chilean city was taken over by its workers after a court ruled that its former owner owed U.S.$1.2 million in back pay. The workers used this sum as a down payment with the government. A manager was hired as part of the cooperative structure, and worker councils were established. Approximately 200 out of 1,500 workers were dropped to streamline production, but an investment was made in a subsidiary firm to absorb the displaced workers. Such social sensitivity also occurred in a nearby factory, where 16 workers volunteered to give up their jobs during a modernization process. In return, they were given the old equipment so they could set up their own company.

One important lesson learned from the Peruvian and Chilean experiences is that precautions must be taken so that the benefits derived by worker-manager enterprises are distributed beyond the original group. Solutions may range from forms of social education to the concept of social property, with some of the profits reinvested in the development of new enterprises.

An urban social center in the Caribbean incorporated an income-generating commercial enterprise to be owned and managed by its workers. Its objectives included revenue for the center, employment generation, and worker control.

Employment was projected at 100, and no profits were expected until the fourth year. Employees acquired shares in the firm in an own-as-you-earn program. During its initial five years, workers would earn 4 percent of the shares each year in lieu of annual bonuses, with matching shares being transferred from the center to its workers. Thus, after five years, the workers would own 40 percent of the equity and the social center would own 40 percent. The other 20 percent would be acquired by a company elsewhere in the Caribbean in exchange for services rendered, that is, for expertise in production, marketing, purchasing, training, and so forth. These shares could eventually be repurchased by the center. The enterprise would also undergo institutional change to allow wider participation in decision making.

The number of workers increased during the first year from 30 to 60, according to plan, and worker involvement in ownership and management proceeded as expected, except for some conflicts between the need for efficiency and worker incorporation into decision making. The shares distributed to the workers were offered to those who cooperated the most and had the best attendance records and had nothing to do with productivity. Training programs, ranging from management and marketing to worker participation, were begun; a local managing director was hired; and good managerial assistance was acquired through a consulting firm.

Community-based small and medium industries with a corporate ownership structure are being established in Northeast Brazil. The starting point of this program was a series of preinvestment feasibility studies conducted by outside technicians. They identified existing resources, markets, skills, and capital and then approached communities to present industrial possibilities at local meetings. If there was general interest in exploiting available resources for industrial activity, they helped find people in the area who had some entrepreneurial experience and who were willing to manage the enterprises. They then gave them additional training and helped them organize the enterprise and offered shares or subscriptions to the community at large. Subsequently, this leverage can be used to attain additional

funding from private and development banks, with the community gaining full financial control as it pays off the loans. The managerial functions can be carried on under the scrutiny of a board of directors from the community, while the managerial base can be broadened through training. Technical expertise was also provided, and local technical capacities were developed.

While a significant number of new industries have been established and their demonstration effect has stimulated further industrial growth, the program has not been successful according to one important program criterion: establishing a broad ownership base. In some cases, some lower-middle-class and lower-class people have held shares, but eventually, most of the firms were controlled by an elite, which came to own 25 to 30 percent of the stock. In addition, there was and is no protection for the small stockholder in terms of assuring dividend payments or a market for the sale of his shares. Good management also has been a problem, demonstrating the need for a much greater emphasis on community organization, involvement, and leadership identification.

The University of Ife in the Western State of Nigeria has established an Industrial Research Unit (IRU).[8] There is an increasing awareness of the fact that almost all Nigerian governmental initiatives in industrial promotion have concentrated on large industries and on attracting foreign enterprises. Although small- and medium-scale industries are owned principally by Nigerians, they have enjoyed little governmental attention. They have received very little bank credit, no legislative protection, and no managerial assistance. The IRU was established to counteract this trend.

In Nigeria, as in many developing countries, statistics on small- and medium-scale industries were practically nonexistent until recently. Over 45,000 businesses have now been surveyed, ranging in size from one to 50 employees, and a data bank on small industries has been established. Major bottlenecks in developing small- and medium-scale indigenous enterprises include management, skilled labor, and technology. Finance is often perceived by entrepreneurs as the primary limiting factor. The IRU feels, however, that banks will be more willing to lend as enterprises acquire improved management and organization. Accordingly, an industrial extension service has been established, together with several training centers, to improve the skills of managers in small businesses.

The University of the Philippines Institute for Small-Scale Industries, the National Manpower Youth Council, and the Development Bank of the Philippines have established an entrepreneurship development program designed to give the managers of small-scale enterprises the technical skills necessary for the successful use of industrial credit.[9] This is part of a nationwide effort to promote

small-scale industries and employment, especially in centers outside Manila.

The program brings established entrepreneurs into six-week courses on business management. It also provides viable small businesses with advice and assistance in financial and technical management and advice on exporting.

Publicly funded centers have been established in Kenya to demonstrate equipment repair and maintenance techniques and to promote various types of light manufacturing for inexpensive consumer goods, such as jute products and tin cans.

Assistance to Small Enterprises as Subcontractors

Development corporations have been established to assist small enterprises as subcontractors to larger enterprises that manufacture for the domestic market (automotive parts, consumer electronics, clothing, sport goods, and so forth) or cooperatives linked to external markets (wood products and other items). Some programs include efforts to upgrade repair shops into parts-manufacturing and subassembly units.

Industrial Estates for Small-Scale and Artisan Enterprises

In some cases, industrial estates have been created for small artisan shops oriented to export markets; they have included technical support services, market research, marketing, administrative support, and product design centers.[10] One such estate, in Sialkot, Pakistan, has developed exports in sporting goods and medical instruments.

Production in labor-intensive enterprises should be oriented to full-time, part-time, and seasonal employment to allow absorption of both the unemployed and underemployed, as well as mothers and school-age children (in the latter case, to encourage at least part-time attendance at school—an improvement over situations where school-age children are fully occupied earning income for the household and are denied formal schooling entirely).

Cooperatives

Support for cooperatives may be particularly useful for achieving the objectives mentioned at the beginning of this chapter, especially the fourth: the establishment of momentum for self-improvement.

As in the case of individual enterprises, the variety of projects that might be supported is great, and the time required for benefits to be felt will vary greatly. Many target groups can benefit from

cooperative projects (possible exceptions include those with no property rights and those who are only in transit; individuals in these categories may lack the commitment for effective cooperative organization). The types of assistance needed include all of those indicated for assistance to individual enterprises, including the purchasing of materials and the marketing of final products. In addition, special attention should be given to technical assistance and training in management and finance, including the rights and responsibilities of cooperative membership.

The following examples are indicative of project types that might be considered.[11]

A Federation of Self-Managed Enterprises

A private development institution in Latin America evolved from the failure of a national training association and is now helping establish a number of worker-managed enterprises. The earlier association failed in the sense that although its training focused on developing worker skills, only 2 percent of its graduates were placed. The new private institution perceived the key issue to be the powerlessness of the worker to influence decisions crucial to his or her livelihood and well-being. As a result, its objectives have gone beyond training and job creation to forming new economic organizations in which the workers gain control of the decision-making process in their own enterprises.

In order to avoid the failures of other cooperatives, a process has been initiated through which worker groups gain new attitudes and the skills necessary to manage productive enterprises. About 20 community workshops, ranging from garment makers to shoemakers in three major cities, are expected to evolve over the next five years toward autonomous management and confederation.

The first stage of development involves technical and cultural education to increase worker self-confidence. Courses are conducted in mobile classrooms in the barrios. Potential participants must come from the same barrio, be unemployed, and have completed technical training. Market and production feasibility studies are then conducted, and about 20 graduate trainees are assisted in forming a community enterprise. For one year, the workshops are not expected to make profits and are subsidized against their future profits. During this second stage, worker skills are consolidated on the job, and a sense of identity with the enterprise is developed. Daily operations are supervised by an elected associate.

Worker participation in management is achieved in a subsequent stage, when the entreprise reaches the breakeven point and the associates have an adequate command of technical skills. A main committee and a series of subcommittees are responsible for the

administration of each workshop. Membership on the subcommittees is rotated in order to maximize the experience of associates in a variety of functional areas. After wages and operating costs are deducted, 50 percent of surplus revenues go to associates in proportion to the hours worked, 20 percent to common funds for educational and other social services, 10 percent to amortize the initial capitalization and interest payment, and 20 percent into a fund for the creation of new enterprises. Representatives of the original workshops meet monthly as part of a workers' assembly. When these enterprises pay back 40 to 50 percent of the original investment, they have the option to break free of the parent institution and join a federation of enterprises or become completely autonomous, in which case, payment for the initial capitalization costs is due, and at least one new workshop must be capitalized.

A Wood-Working Cooperative of Small Workshops in Honduras

A wood-working cooperative made up of over 100 small shops was initiated in Tegucigalpa. Its main goal was to improve the economic, social, and cultural conditions of its members. It stimulated production and productivity through the acquisition of raw materials, tools, machinery, and equipment and assisted in marketing.

The success of the cooperative to data can be attributed to the organizational efforts, which have extended over a long period of time and which, along with courses on cooperativism, have installed a deep sense of commitment among the membership. In addition, the coop has been meeting the needs of the member shops. Technical advice in furniture design and equipment selection has come from a consulting group, which has also guaranteed credit from three local banks. Export markets are only now developing, but the local market has expanded rapidly, with the government placing a number of orders. The government has also responded to the political potential of the organization by rerouting part of the supply of the country's best lumber away from export markets and toward local industry.

Membership increased sevenfold in three years, and total employment in the shops increased fourfold. Vertical integration with the lumber and leather industries—an important component of this project—increased the rate of job creation indirectly. Planned spin-offs from industrial development include investment in a training school, an adult literacy program, and a local health clinic.

The project has not been without its difficulties—in particular, cash flow problems and market constraints—but these have resulted in temporary rather than basic setbacks. As export orders increase, the cooperative is expected to expand rapidly.

A Community Food Preservation Enterprise in Belize

This small, cooperatively owned food-processing enterprise is operated and managed by women. An active organization of eight churches and other local groups has used the enterprise as a means of organizing women. Previous activities concerned with women dealt primarily with vocational training, nutrition, home management, and education. Because of the women's interest in food preservation, it was decided that the establishment of a small canning center would provide a focal point for their developing leadership, for cooperative training, and for education in nutrition. A secondary objective was to begin to reorient the economy away from imported foodstuffs and toward locally produced and processed goods.

A large-scale commercial venture was judged to be infeasible because of insufficient vegetable supplies and a lack of in-country technical expertise. A small canning facility made sense, as there were sufficient supplies and it could provide a market for, and rationalize the production of, presently unplanned fruit and vegetable crops. The enterprise is now functioning, with teams of six women from three urban slums and two nearby rural areas working one day a week each. They preserve jams, jellies, and vegetables, which are sold to local hotels, supermarkets, and governmental outlets. One day each week, families in the community can use the facilities for personal food preservation. These 30 women will form the base of a group that is projected to reach 2,000 members and should be managing a viable cooperative after two years.

The schedule has been upset by a variety of factors, including a supply shortage (due to drought), lack of transportation, the high cost of imported jars, and an overemphasis on quality at the expense of volume production. These problems are presently being righted with the purchase of a truck, the use of tin cans, technical training, and assistance in improved commercial organization and efficiency.

This project is viewed in the Caribbean as a model in terms of both import substitution and participation by women in economic development. It also integrates community organization, urban employment, the upgrading of skills and nutrition levels, and agricultural production and is an important linkage between rural and urban societies.

An Integrated Boat-Building/Fishing Project in Tanzania

This is an integrated project in the strongest sense and has important implications for coastal cities with poor fishing communities. It ties together the revitalization of two declining industries, boat making and fishing, with the formation of new production cooperatives. Industrial revival and technological improvement in this case

will result not only in an increase in local employment and income but also in the restructuring of an industry through new ownership patterns and in higher levels of community health and nutrition.

Tanzania, in an attempt to increase the catch of its poor fishermen (faced with international competition) has experimented successfully with the conversion of traditional boats, using simple tools and converted industrial engines. This approach has the advantage of using local resources, introducing a technology understandable to local craftsmen, and enlarging the catch area. (The use of imported boats would have increased dependency rather than self-reliance.)

A boat builder cooperative is being formed, and a store and workshop will be constructed at the boat-building site. Some of the craftsmen will instruct apprentices. The first boats will be sold to two fishing communities for use on a cooperative basis. This will greatly increase their catch, while breaking the hold of the traditional elite on boat ownership. A number of fishing-related industries are expected to develop, including carpentry and blacksmithery, masonry construction, sail and rope manufacture, and net repair.

Wastepaper-Collection and -Processing Cooperatives in Latin America and India

A private development corporation in Colombia has organized hard-core urban unemployed workers who had lived off trash into a self-managed, profit-sharing enterprise for trash collection and recycling. The objective was to provide employment and raise the income of this marginal group while simultaneously alleviating an urban health problem and a paper shortage.

About 15 trash pickers became trash processors through the efforts of the development corporation. Wastepaper was purchased from over 360 affiliated trash collectors and then hand baled and processed before resale, using simple, labor-intensive techniques. Incomes rose from U.S.$.04 to U.S.$4.00 per day, and the staff quickly increased to 60 workers. Employment was recently reduced, partly because of the introduction of an electric baler and several retirements, but the completion of a new plant with additional equipment is expected to result in a substantial increase in jobs. The use of the first electric baler increased the income per worker by well over 50 percent.

The enterprise is presently managed almost entirely by the corporation, and plans for an eventual takeover by the cooperative itself depend on the raising of workers' educational levels.

A similar scheme in South India may have more chance of early success, since it has fewer labor difficulties and a greater sense of community ownership. In this case, ten men collect waste

from surrounding factories and offices, 25 uneducated and unskilled women sort the paper into nine varieties, and the men hand press and sell the paper to nearby mills.

Training Outside Individual Enterprises and Other Measures Designed to Increase Individual Productivity

Projects designed to generate increased demand constitute one type of action, but real demand must exist for an employment-oriented project to have sustained success. Provided that demand does exist, other projects may focus on the supply side, that is, on increasing the productivity of individuals so they can take advantage of existing or new demand. Such projects often are undertaken outside of individual enterprises because their intention is to prepare individuals to respond to a variety of job opportunities, because no formal training is available in the enterprises for which individuals presently work, or because the individuals involved are not yet skilled enough to obtain jobs.

Productivity-oriented projects of this type may be considered in two broad categories: projects intended to increase worker productivity generally and projects intended to increase specific skills.

Examples of projects of the first type include those that improve water supply, sanitation, nutrition, personal health care, and literacy. Projects of the second type often require projects of the first type to be undertaken with them if they are to be fully successful. Projects of the first type are frequently basic components of community improvement programs.

A word of caution is in order on projects of the second type. There have been many cases in which worker training undertaken outside an existing enterprise has failed, either because the skills imparted were not of high enough quality to be utilized by any serious enterprise or because there was no real demand for the skills provided. As a general rule, it is preferable to undertake training within ongoing enterprises to be sure the skills developed are tailored to real needs. When this is not possible, potential employers should at least have an opportunity to influence training programs to ensure that they will result in employable skills.

Training, by definition, is likely to be a relatively slow-yielding activity, especially when it is undertaken outside ongoing enterprises. It can, however, reach well down the income scale to previously unemployable people.

In some cases, community center projects have been designed to increase income and employment through the development of basic skills, such as carpentry, masonry, plumbing, welding, and sewing,

and through support for home industries. Some training centers carry out market research and function as production centers, achieving financial self-sufficiency through commissions earned for their services.

In Guyana, a community resource center in an urban slum evolved into a training, production, and marketing center for the unemployed. The center began with the provision of pre- and post-natal care and developed into a local meeting place, thereby establishing strong roots and a strong identity within the community. It became an urban grass-roots mechanism for the stimulation of community action.[12]

The center utilized employment-oriented action programs to awaken community participation. Its principal objectives were to develop local skills and talents and to help organize home industries to augment incomes and employment. It also aimed to nurture self-reliance through self-employment. Twelve-week courses were offered in carpentry, masonry, plumbing, welding, sewing, and candy making to 500 students throughout the year. Those who completed the courses were encouraged to set up home workshops, which become cooperatives, while those unable to work at home continued to use the center's facilities. The center also conducted market research and provided marketing services. It plans to become self-sufficient within two years by retaining 20 percent of the sales revenues from all products manufactured on its premises or marketed through its efforts.

So far, enterprises producing soft toys, steel gates, iron window bars, and homemade candy have been established. However, these are still individual production units and have not yet developed into communal units, as had been hoped. The project is to be evaluated to assess the degree to which it has instilled self-reliance in the community.

Direct Hiring by Government

The relative importance of employment from direct governmental hiring of labor will vary greatly from place to place. If governmental ownership of industry is significant, there will be opportunities in manufacturing. Even without such ownership, there are likely to be opportunities in construction, public transportation, environmental sanitation, and administration.

In construction, it is possible to reach well down the income scale. There may be excellent opportunities for governments to influence both employment generation and product quality through experiments with more labor-intensive building technologies. A return to sound traditional techniques that are labor intensive and resource

conserving could be encouraged through building research and demonstration projects in many cases.[13] The scale of governmental building operations often is such that governments can also encourage standardization and efficiency in construction-related industries, such as brick making, joinery, hardware, and furniture making. The nature of the employment impact of construction will depend partly on the particular subsectors involved. If there is a steady demand for housing space, there will be an opportunity to generate relatively stable employment. In such subsectors as road construction, public buildings, and utilities, levels of activity may fluctuate; if this is the case, it will be important to schedule projects to avoid major peaks and drops in the local demand for labor.

In the mass transportation sector, there are opportunities for generating employment at a wide variety of skill levels in production (for example, body building), operations, maintenance, and management.

In sanitation, as suggested earlier, there may be opportunities to use traditional labor-intensive technologies for street cleaning, drainage, maintenance, garbage, and the collection and disposal of human wastes. This may also help avoid the maintenance problems often associated with sophisticated capital-intensive technologies.

There are many opportunities in administration to employ maintenance and security staff, messengers, and low-skilled support staff of various kinds. Support staff can increase the productivity of skilled administrators, especially where communication and transportation are underdeveloped.

Direct governmental employment in the sectors suggested can have an impact on virtually all target groups except those whose productivity is so low that remedial or special support is needed.

INSTITUTIONAL ASPECTS

Underdeveloped financial markets and institutions can have an adverse effect on the kinds of technologies adopted by enterprises. If interest rates are pegged at artificially low levels and the market is denied the function of credit allocation, lenders are likely to adopt other credit-rationing criteria. They commonly choose to lend to enterprises with the greatest degree of fixed capital investment. Loans for working capital to smaller, more labor-intensive enterprises are considered too risky. The low interest rates that are predominant in organized financial markets also encourage capital-intensive investments.

Appropriate financial mechanisms may encourage middle- and upper-income entrepreneurs to undertake productive investments

that are more labor intensive. The lending process can also be geared more closely to the direct capital needs of low-income people themselves, through a greater emphasis on small short-term loans at formal market rates coupled with effective credit management.*

Credit is often seen as a primary means of improving the productivity and incomes of both the rural and urban poor in developing countries. Nevertheless, credit alone is not a panacea. Experience with credit directed toward low-income urban residents (and much more extensive experience with credit for the rural poor) has shown that successful financing programs depend on a range of complementary factors. These include the existence of real opportunities for economic gain through the adoption of credit, the recognition of such opportunities among potential credit users, the availability of technical assistance and other complementary services, sound credit policies, and well-managed credit institutions.

Credit Programs for Small-Scale Enterprises

The types of credit programs necessary to service smaller-scale urban lending may require separate institutions or, at least, separate departments in existing agencies. If large and small borrowers are serviced under the same programs, a disproportionate share tends to go to large borrowers. Risks and administrative costs are greater with small lending and require higher rates of interest, and many credit agents are very susceptible to social and political pressures to direct credit to larger borrowers.

The terms and conditions of lending must be flexible. Loans must be tailored to meet specific needs, both in amounts and in the repayment terms established for individual borrowers.

Low-income credit recipients usually are uneducated and frequently are illiterate. Many are tempted to use borrowed working capital for current consumption purposes. They are suspicious of each other and of middle-class governmental organizers. Credit programs and governmental development schemes are not new; many have failed in the past, often because of unscrupulous or inefficient management. Programs for low-income groups, in particular, require

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*FEDECCREDITO, a federation of credit groups in El Salvador, for example, is lending to market vendors and other very small-scale entrepreneurs at 12.5 percent per year, is willing to make very small loans, collects payments frequently (using the practices of informal lenders as a model), and has very low rates of default.

large educational and technical assistance components to assure their ongoing success.

One of the largest single constraints on small-scale credit programs is the difficulty of achieving financial viability. The high costs of servicing small-scale operations and the technical assistance components of lending programs are contributing factors. High rates of default compound the problem.

To ensure the viability of credit institutions, all or most of the costs of credit must be passed on to the borrower. Interest rates should cover the opportunity costs of capital, the costs of administering credit, and the costs of risks and defaults. The total of these items can require lending rates as high as 20 percent in real terms, but this is usually considerably below the costs of credit in informal financial markets.

Governments may feel that the social objectives of loans to small producers warrant subsidies. Subsidy resources have been used in several instances to finance credit administration and technical assistance programs. They can be especially effective during the initial growth periods of new institutions. However, several factors suggest a need for caution in the use of subsidies. Lower-than-market interest rates can lead to high capital output ratios in new investment and limit the expansion of employment among the urban poor. Subsidies can also lead to the selection of marginal investment projects that are not socially profitable and which would not otherwise be selected. Subsidized interest rates frequently lead to corruption and politicization of the institutions involved, with funds being diverted away from their original purposes. They are also likely to result in a rapid decapitalization of funds, especially where rates of inflation are high.

Inflation should be a major concern. Lending in an inflationary economy represents a subsidization of borrowers, unless interest rates include expected inflation rates or the balances of the principal of loans are indexed to price level changes. Although indexing can be an effective means for maintaining the real value of capital, it can also cause economic imbalances if applied to investments in only one sector.

In many countries, pure governmental credit systems may be especially prone to uneconomic interest rates, high rates of default, and decapitalization. There is often a deeply rooted view that governmental money is free money. To encourage the creation of economically sound credit mechanisms, it may be desirable to utilize the management capacity of experienced private financial institutions as fully as possible. For example, governmental support can be focused on guaranteeing private lending for specified target groups. The branch offices of commercial banks can be used as collection and

management agencies for governmental lending and be paid a fee for this. The advantages include experienced management, the image of a private-sector operation that is serious about collections, convenience for the borrower, and proximity to the borrower to facilitate face-to-face contact if defaults or other problems appear to be imminent.

Savings Mobilization

Credit institutions are often dependent, at least in part, on the mobilization of private savings for development lending. It is especially difficult, however, to encourage low-income people to save freely. Although examples of successful savings mobilization with high interest incentives can be cited (Japan and Taiwan are examples), some of the more successful savings schemes—notably in Latin American countries, such as Brazil and Mexico—involve compulsory saving by loan recipients. One device that is worth considering is to require the establishment of a savings account from which the lender can withdraw loan repayments regularly, with the balance continuing to yield interest to the borrower.

Forced savings systems may be most effective when tied to a comprehenaive and nationwide indexing system, in which currency value, wages, and savings all directly reflect price levels. In Brazil, for example, the cruziero has been revalued regularly since 1966, and official wage levels have reflected inflation. Savings have been protected through monetary correction plus interest of the order of 7 or 8 percent annually.

Additional research and experimentation are needed to develop innovative techniques to encourage the mobilization of savings. An example from the northeast of Brazil is indicative of what might be done elsewhere. The system developed there includes active client identification, a loan guarantee fund, credit, technical assistance, and explicit evaluation. These are discussed briefly in the following paragraphs.

Client Identification

In most financial institutions, the potential borrower must take the initiative in establishing contact and arranging a loan request. Because one goal is to introduce new groups to the use of credit, an extensive system of promotion has been established in which UN field workers visit communities to establish direct contact with potential borrowers and encourage their participation.

Loan Guaranty Fund

To alleviate the lack of financial guarantees, which plague many small business men in Recife, the Uniao Nordestina de Assistencia a Pequenas Organizacoes (UNO) has created a special endowment fund. Through funds provided by various banks and other sources, a system of credit guarantees has been established to cover 20 percent of each individual loan.[14]

Credit

Six Brazilian banks, including the Banco do Brazil, extend credit through the UNO mechanism. Loans usually are given only to clients with no access to normal commercial credit. Repayment periods range from 18 to 24 months, with some lines of credit available for up to 48 months. In Brazil, the credit system is complex; interest rates and amortization periods can vary substantially, depending on which line of credit is used. As a result, one of UNO's functions is to orient the borrower to the line of credit that is most favorable for a specific purpose. A parallel function is to convince banks to accept small borrowers in their most favorable credit programs.

Technical Assistance

Evidence from prior experience in Brazil and elsewhere has shown that technical assistance is essential before and after credit is approved. Before credit is extended, assistance is provided to conduct feasibility studies, to develop financial projections, and to prepare the loan request itself. Once the loan has been approved, assistance includes financial planning, stock control, production planning, accounting, marketing, and general administration, including the processing of local registration.

Explicit Evaluation

Since the program was initiated in September 1973, a number of significant milestones have been reached. In December 1973, the board of the São Paulo Association of Banks formally endorsed the UNO program. Six months later, financial support reached 52 percent of total operating costs. By September 1974, the first year's results had more than exceeded expectations. In October 1974, the National Banking Congress officially endorsed the program, and the number of participating banks in the guaranty fund rose from four to 11. In November 1974, the Rockefeller Foundation and the Universidad de Bahia approached Acción Internacional Técnica (AITEC) to assist in the development of a similar program in a second northeastern city

during 1975. In March 1975, the AITEC/Brazil board of directors was formed to prepare for the expansion of the UNO model to other areas. Official expansion of the UNO model to the city of Salvador, Bahia, was launched in May 1975.

COMPLEMENTARY ACTIONS THAT MAY BE NECESSARY

At least two broad types of complementary action in other sectors may be desirable in conjunction with projects focused on employment and productivity. First, complementary projects in water supply, sanitation, health, nutrition, education, and transportation may be necessary to reinforce productivity gains achieved through the support of enterprises and worker training. The potential contribution of improved water supply, sanitation, health services, and nutrition, although difficult to quantify, is clear. Perhaps not so obvious, but nevertheless important, is the complementary contribution to productivity that may be achieved through improvements in transportation. Reductions in both the direct costs of transportation and travel times achieved through greater efficiencies in transportation and/or land use may increase the productivity of both workers and equipment.

Second, in addition to basic education as a foundation for technical training, projects in adult literacy, family budgeting, saving, and the use of credit systems may be desirable to help low-income households take full advantage of their augmented incomes.

OTHER LIKELY IMPACTS

The types of benefits and negative effects for groups other than poverty groups that may result from employment and productivity-oriented projects are several.

On the positive side, such projects may result in increased supplies of essential goods and services not only for low-income groups but also for middle- and upper-income groups. They may yield increased profits for middle- and upper-income entrepreneurs in businesses employing workers whose productivity has been increased. Public revenues may be increased as a result of the higher property values associated with increased demands for urban space. There may also be increased urban savings and investment, at least to the extent that the augmented incomes of households and enterprises are not required for essential consumption.

On the negative side, in addition to the public costs of project support, there may be increased evasion of business taxes if small

enterprises prove more difficult to tax than larger ones. There may be at least temporary inflationary effects for some essential commodities as a result of greater equity in income distribution. There may be an increased dependence on external markets as a result of more outward-looking growth policies. There may be decreased profits for some middle-income and upper-income entrepreneurs as a result of increased competitiveness in their industries.

Finally, increases in employment in urban areas may result in increased rates of rural-urban migration and increased loads on urban services. Additional in-migration may result in increased unemployment and underemployment, following initial increases in employment rates. It may not be appropriate to regard this entirely negatively, however, for it may reflect the existence of a new low-income group whose members, though statistically underemployed, are nevertheless better off than they were before migrating. The possibility of increased in-migration stresses the importance of undertaking urban employment and productivity programs on a regional or nationwide basis and the importance of undertaking urban and rural support projects simultaneously.

NOTES

1. World Bank, Urbanization Sector Working Paper (Washington, D.C.: World Bank, June 1972), pp. 14-18.

2. United Nations Industrial Development Organization, Industrial Development Survey (New York: UN, 1973), 5:65-66.

3. Gustav Ranis, "Employment and Income Distribution in Developing Countries" (Working paper, no. 115), mimeographed (Washington, D.C.: World Bank, 1971), p. 11.

4. International Labour Office, Fiscal Measures for Employment Promotion in Developing Countries (Lausanne, Switzerland: ILO, 1972), p. 328.

5. For an excellent analysis of urban food distribution in central markets and the efficiency and flexibility achievable through indigenous systems, see Uli Locher, The Internal Market System for Agricultural Produce in Port-au-Prince: A Report Prepared for the Interamerican Institute of Agricultural Sciences (Port-au-Prince, Haiti: Instituto Interamericano para las Ciencias Agricolas (IICA), 1974).

6. Duccio Turin, "The Economic Significance of Construction," Architect's Journal 150, no. 42 (1969): 923-39.

7. The examples in this section dealing with Latin American and Caribbean countries are extracted from material prepared for Planning and Development Collaborative International (PADCO) by Developing World Industry and Technology (DEWIT) on the basis of a series of field studies undertaken by DEWIT in the 1970s.

8. Georgia Institute of Technology, Small Industry Development Network, 1, no. 1 (third quarter 1974):1.

9. Georgia Institute of Technology, Small Industry Development Network, 1, no. 1 (fourth quarter 1974):6.

10. These examples are extracted from materials prepared for PADCO by DEWIT on the basis of the series of field studies undertaken by DEWIT cited earlier.

11. Examples in this section are extracted from materials prepared for PADCO by DEWIT on the basis of a series of field studies undertaken by DEWIT.

12. Example extracted from material prepared for PADCO by DEWIT on basis of series of field studies undertaken by DEWIT.

13. Alain C. Bertaud, "Tradition Serving Progress," Human Settlements (April 1972).

14. This example is extracted from material prepared by Acción Internacional Técnica (AITEC), Cambridge, Massachusetts, in September 1975.

6

PROJECTS IN WATER SUPPLY AND SANITATION

ROLE OF WATER SUPPLY AND SANITATION

As urban concentrations grow, the amount of water required and the amount of waste generated by households and industries increase at rates that are usually faster than the growth rate of the urban population. The resources and managerial capacities needed to deal with this reality have been sadly lacking in most cities of the developing world. Consequently, the water and sanitation systems of most urban centers are severely overloaded; in most cities, they were designed for much smaller populations than they are now forced to serve.

The most urgent issue associated with current deficiencies in utilities is the issue of survival. Within the last ten years, several major metropolises have been on the brink of disaster because of water shortages. The next several years may see other cities, including at least one that already has a population of over 4 million, in a similar state. Deaths will occur, and diseases will be contracted from the polluted ponds, streams, and wells that are the only water sources available. There may be additional deaths and injuries from the consequent riots and disturbances that are almost inevitable.

The World Health Organization (WHO) estimated in 1970 that about 25 percent of urban households in developing countries had individual or courtyard water connections, 26 percent were served by public standpipes, and 49 percent had no water service at all from a piped system. A capital investment of about U.S.$9 billion would have been necessary to upgrade water standards to a minimum level (40 percent individual and 60 percent public standpipe) during the 1971-80 period. The enormity of this gap can be understood by

comparing it to the fact that the International Bank for Reconstruction and Development/International Development Association (IBRD/IDA) and IDG helped to finance projects in the sector costing U.S.$1.5 billion during the 1961-70 period.[1]

Adequate supplies of potable water are a universally felt need in urban centers. However, because the linkage between sanitary waste removal and public health are not always recognized adequately by individuals struggling at subsistence levels, the demand for sewerage and drainage facilities has not been as strong. Sewerage construction has lagged behind construction of water systems. The sewerage treatment equipment of one major Asian city was capable of dealing with only 8 percent of the biological wastes generated daily in 1973; because of poor maintenance, it was operating at half capacity and was therefore dealing with only 4 percent of the daily load.

Impact on the Productivity of Labor and Land

It is difficult to determine the precise relationship between environmental sanitation and disease. Multiple environmental factors that reduce disease cannot easily be evaluated independently, but the data available indicate that populations with low levels of environmental sanitation tend to have high rates of morbidity and mortality. A number of studies have shown that the incidence of typhoid, cholera, and diarrheal disease is significantly less where there is a safe municipal water supply. Often, in the poorest communities, residents can only hope for the minimal quantities of water necessary for survival; they may never have the luxury of adequate water of decent quality.

The incidence of disease has also been reduced by the introduction of sanitary excreta disposal. The construction of privies in Costa Rica helped reduce the death rate from diarrhea and enteritis by 50 percent. In some cases, where water and sanitation have been upgraded together, the impact has been dramatic. In one case in the Philippines, improved water and toilet facilities reduced the incidence of cholera by 70 percent.[2]

Because of differences in cultural habits, educational levels, and physical environments, identical water supply projects in different cities may not yield equal health benefits. The costs of systems will also vary. With the resource scarcities that are typical, trade-offs between health and investment will have to be established. Very often, complementary actions in health training, system maintenance, and related fields can increase the health benefits from modest capital expenditures in water and sanitation. The measurement of the economic value of improved health is even more difficult. One crude

method is to determine the additional wages that healthier workers could earn, with estimates corrected to reflect the high levels of unemployment which are likely among many of the beneficiaries of health improvements.

It should be borne in mind that a major part of the development problem is not just the efficient allocation of existing resources but also the creation of additional productive resources, including more productive human resources. Achievement of at least minimal levels of health, for which adequate water supply and sanitation are essential, is a key part of any strategy for such resource augmentation.

At least minimal water supply, sewerage, refuse disposal, drainage, and flood protection are essential also to achieve viability in many of the modern manufacturing, trade, service, construction, transportation, and other industries whose growth is important in spearheading urban economic development. Minimal public services can make land, capital equipment, and labor more productive. Although small establishments in the traditional sectors are able to persevere without adequate utilities, at least a rudimentary level of service is essential in the modern sector. In most cases, quite modest improvements in service systems can also increase substantially productivity in the traditional sectors.

The location and pricing of water and sanitation services (together with roads, transport, energy, and telecommunications) can greatly influence the locational options available for all types of urban activity. One has only to observe how households and enterprises cling to the meager water and sewerage lines that now exist to realize the extent to which these utility lines are literally lifelines and to appreciate the extent to which they influence the locational decisions of the private sector.

In addition to their impact on health, productivity, land use, and environmental quality, improvements in water supply and sanitation also increase land values, often dramatically. This can increase the value of assets controlled by the poor, if low-income property ownership exists, as well as the assets of private groups and public revenues (if there is an effective property tax).

Impact on Savings

Improvements in health achieved through water and sanitation projects can have important benefits for both household and public budgets. Fewer funds will be necessary for vaccination programs, hospital and health center facilities, physicians and staff, and medicines. In many cases, the impact of existing health services can increase even without increased budgets because of the reduced

incidence of disease. In many cities, public and/or private funds are spent for inadequate services, such as emptying pail latrines, pumping out cesspools, and clearing surface drains. A sewer system would save these expenditures and provide a sanitary environment.

Individuals often spend large amounts of time and money simply to procure water. In particular, women and girls, who could be employed more productively, may spend as much as four hours each day waiting at a public fountain and carrying water to their dwellings. More convenient and dependable water supplies would reduce the time necessary for this and make labor available for other activities. If there is a demand for their labor, they could be using their time to augment household incomes. Even if there is no market demand for their services, their water-gathering time could be spent to improve family life and increase household productivity.

Improved water supplies can reduce fire losses. Improved water, sanitation, and drainage can reduce the risks of erosion and environmental degradation. Losses due to water pollution from inadequate sewage treatment and disposal have been documented in many cities, as have cases of groundwater contamination caused by improper solid and human waste disposal—contamination that increases the cost of water treatment where groundwater sources are used.

A more subtle but pernicious form of environmental degradation results from waste and erosion associated with extending roads and settlements into vast tracts of medium- and low-density development, together with the provision of water and sanitation services to middle- and upper-income groups. Globally, it is likely that hundreds of thousands of acres of urban land are wasted or made unfit for decent human use by inefficient and deficient utility systems.

A surprising amount of water in the cities of the developing world is lost in the distribution systems. This loss results in part from physical leakage in deficient or improperly maintained equipment. For example, an estimated 24 million gallons per day were being lost in Karachi, Pakistan, in the early 1970s. Illegal and unmetered connections are also responsible for a large economic loss to water agencies. Both types of losses inhibit the ability of water agencies to maintain and expand systems properly.

Inadequacies in water and sanitation systems breed further waste. In cities of many developing countries, there is a tremendous wastage of materials (as well as electrical energy) in private ground reservoirs and pumps and roof tanks because of inadequate pressure in public water systems. The nutrient content of human and other wastes is lost as fertilizer because of inadequate sewerage systems. Many of these losses are due to inefficiencies in management—one of the principal barriers to rapid improvement.

Impact on the Urban Poor

Those who are the least well-equipped to deal with the consequences of poor water and sanitation are the ones most severely affected by deficits in services. Low-income households living in crowded and unsanitary conditions are the ones most exposed to disease. They are the least able to pay for treatment. They must frequently live in low-lying marginal areas that are subject to flooding. They have very little beyond their own initiative to rebuild damaged homes. The relatively well-off minority, often 20 percent of an urban population or less, is served adequately, and sometimes sumptuously, through public systems, while the vast majority must struggle with minimal services.

An Asian metropolis that is not atypical will serve to illustrate these problems. In that city, as in many others, current policies are systematically biased in favor of the affluent minority and a very small middle class. Water and sanitation systems are extended at great expense to serve large unoccupied plots purchased speculatively. Taxes and low-interest borrowing are thus used to subsidize low-density living for a few. The land-use patterns that are created breed equally inefficient and inequitable urban transport systems, as well as energy waste. The poor are left in densely inhabited areas with minimal or no services and are exposed to both biological and physical danger.

The 80 percent majority that are dependent on community taps (if they are so fortunate), pit latrines, and the like are not only vastly worse off in the levels of service available but they also pay much higher unit prices for the poor services they do receive. A wealthy family may use 120 to 150 gallons of water per person per day, including water for gardening, a swimming pool, car washing, and the other trappings of affluence, yet it may pay only U.S.$.15 to U.S.$.20 per 1,000 gallons for that water. A poor family that has to pay for water from a communal tap or from vendors may pay as much as U.S.$2 per 1,000 gallons.

Poor households in a similar situation in a Caribbean city pay as much as U.S.$20 per 1,000 at community taps and from vendors. Because of these high prices, a poor family may be forced to consume as little as two gallons of water per person per day, and the water that is available often is contaminated.

Well-conceived water and sanitation projects can have an important impact on the redistribution of consumption benefits. This redistributive impact can be increased if progressive taxation or cross-subsidization is used to finance such improvements. In addition, more equitable land-use patterns can be encouraged through the

well-planned extension of water and sewerage facilities for use by low-income families.

Sewerage and water programs can also generate employment in construction and maintenance. In many cases, labor-intensive construction and maintenance techniques should be given higher priority. Engineering consultants from developed countries are sometimes among those responsible for using unnecessarily complex and capital-intensive technologies. They are reluctant not to use sophisticated systems; they sometimes mistakenly consider simpler ones to be substandard.*

The implementation of community water and sanitation projects can also involve important informal education in facility use and maintenance, health care, and other areas of direct benefit to the poor.

Improvements in the financing of utilities, and the provision of training in family budgeting can help the poor to afford improved public services and other necessities. Charges for water and sewerage connections and in-house installations should often be spread over a period of time (say, three to five years) to make it possible for poor families to pay for adequate services. One device for doing this is to incorporate utility connection charges in housing mortgages.

POLICY IMPLICATIONS

Projects designed to achieve better distribution of safe potable water and sanitation to low-income groups where total resources are severely constrained are likely to require marked departures from previous practices. They may meet substantial opposition from middle- and upper-income groups. Their chances of successful implementation will be enhanced it they are supported by well-publicized policies for the general improvement of urban services. This type of policy support is likely to be necessary also for any changes in pricing.

It will be important to establish basic water resource conservation policies to protect sources. This may involve the regulation of

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*A study published in 1974 for San Salvador made proposals for the installation of a conventional sewage treatment plant but did not question the need for such a plant. A subsequent study by PADCO in 1977 showed that the foreseeable treatment needs of this Central American capital could be met without a conventional plant by taking advantage of local topography and natural aeration, thus saving at least U.S.$100 million in capital costs and U.S.$2 million more annually in operating costs.[3]

overgrazing, reforestation, and the regulation of draw-offs from groundwater for agriculture sources serving urban areas. The share of urban areas in total water use usually will be small, but it may be necessary to establish rural-urban water allocation policies to ensure adequate long-term supplies for urban areas.

PROJECTS WITH A POTENTIALLY HIGH IMPACT ON THE URBAN POOR

In practically every city of the developing world, there is a great deal of scope for improving the operation of public services within existing capacities. Improvements in the management, financing, and use of existing facilities can often be a much more cost-effective means of expanding services than large-scale additions to systems. Accordingly, in each of the following sections, specific measures will first be considered to optimize the use of existing capacities. Projects involving major system additions will then be discussed. Many of the projects listed can be undertaken individually or as parts of more comprehensive water supply and sanitation projects.

Water Supply

Optimization of Existing Systems

Reduction of Losses. Repair and maintenance of existing systems can lead to substantial savings. Meters can be placed on the supplies of large users. Overflow valves can be required on private reservoirs and tanks. Inspectors can find and eliminate illegal connections, as well as damaged, missing, and leaking faucets and valves. Financial losses can be reduced through better accounting, budgeting, and collections. Many of these reforms may be politically difficult, but the possible savings can greatly reduce or postpone major new capital expenditures.

In Karachi in 1973, it was estimated that 40 percent of the existing water supply was being lost.[1] Of this total loss of 41.5 million gallons per day, 25 million gallons per day was being lost from the bulk supply between pumping and bulk urban distribution stations. The remainder, about 16.5 million gallons per day, was being lost in the city's distribution system. In addition to these losses, it was estimated that large amounts of water were wasted by users as a result of poor metering and the low unit prices charged to upper-income

consumers. Most water rates were a flat 6 percent rate of the rental value of the property.

A program to eliminate losses has been initiated as a result of the studies completed in 1973. A survey has been undertaken to identify the location and size of all mains and valves and to identify as many of the leaks as possible. An increase in prices from current rates, which are among the lowest in the world—at U.S.$.15 to U.S.$.20 per 1,000 gallons—has also been proposed to encourage the elimination of waste where usage is metered.

Metering is desirable for most uses. Some 15 to 20 percent of losses are considered to be unavoidable in any water system, but it is expected that between 30 million and 35 million gallons per day could eventually be saved with the elimination of loss and waste. The capital cost of producing and distributing this much water with new capacity would be between U.S.$30 and U.S.$35 million, but the cost of repairs would be less than U.S.$1 million. The cost of metering would be about U.S.$30 million. Since the introduction of metering in a previously unmetered system will usually take a considerable amount of time to achieve, initial improvements may have to be focused on the restructuring of pricing, based on property values and land use, together with a more vigorous policing of use.

Rationing, Reallocation, and Pricing Changes. These measures can also increase the water available for consumption by the urban poor. Water can be rationed to prevent wasteful consumption by upper-income groups. It can be more directly allocated to outlets in poorer neighborhoods, especially during periods of critical shortage. Pricing systems can be reformed to establish more equitable unit costs. User charges should be adjusted to ensure that affluent consumers, who use large quantities of water for nonessential purposes, will pay the full cost of extending infrastructure to low-density residential areas. The correction of regressive cross-subsidization alone could encourage conservation and improve the consumption of water for the urban poor. In Yemen, for example, initial modest levels of consumption are charged at a low rate, and successively higher levels of consumption are subject to progressively higher rates, so that large consumers, in effect, subsidize the smallest consumers. Considerable consumer education may be necessary to optimize the impact of these and other measures. The use and maintenance of facilities, the sanitary storage and transport of water, and the value of conservation are important subject areas for education.

Differentiation of Water Quality. This may be considered to optimize the use of existing treatment and distribution capacity. Considerable savings in the use of high-quality water can be achieved by establishing

different classes of consumption. Industrial users, lawn and garden watering, and close-in irrigation can use water of lower quality than that needed for personal use by households. However, this approach requires a separate distribution system with high capital costs.

Reduced Industrial Water Consumption. In some cases, major opportunities exist to reduce industrial water demand. This is an important consideration in situations where industrial consumption may be of the order of 20 percent of total water consumption. In an installation some years ago in a semidesert environment in the United States, which demanded the adoption of water-conserving technology, a steel plant was designed to use only 1,400 gallons of fresh water per ton of steel produced, compared with conventional plants using 65,000 gallons per ton on a once-through basis. This was a reduction of 98 percent.[5]

Additions to Water Systems

Water Source Development. New sources, such as wells or pipelines from rivers, may have to be developed to increase capacities. In some areas, tube wells can be considered for low-income neighborhoods. This may require close regulation of use and consumer education to ensure proper maintenance.

Additions to Existing Treatment Capacity. Additions to existing treatment capacity may also be necessary to increase total supply. Here, as elsewhere, there may be opportunities to reduce capital and maintenance costs relative to conventional treatment systems. In a scheme developed for China in the late 1940s the treatment system used consisted simply of an initial intake, a simple device for adding alum to achieve flocculation, and a sediment settling tank with a bamboo grid at the water surface to reduce agitation of the sediment by the wind.*

Expanding Distribution Systems. The potential for improving conditions by major additions to existing systems is illustrated by Karachi, which has developed a ten-year program to expand supply.[6] Estimates for 1973 showed a per capita consumption of 34.5 gallons per day and a total consumption of 138 million gallons per day. Total supply amounted to 162 million gallons per day, and 60 percent of consumption

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*This simplification relative to conventional modern treatment system was described to the author by its designer, Charles C. Spangler.

was used by households. But domestic water consumption varied from 10 gallons per day among lowest-income households to 100 gallons per day by upper-income groups. The 1985 water demand has been assessed at 390 million gallons per day for a population of 6.9 million. If this supply is achieved, it would represent an improvement in water supply per capita to 56.5 gallons per day.

The cost of expanding the system has been estimated at about U.S.$213 million, representing roughly U.S.$1.07 million for each additional 1 million gallons per day of capacity. This includes roughly equal costs for developing new sources and expanding the distribution network. It is expected that the distribution of water will also improve among income groups. By 1985, approximately 89 percent of households are expected to have individual water connections, compared with a 1973 level of 33 percent.

Some small improvements can be made to existing systems to increase output without large capital outlays. Distribution systems can be extended from existing mains to low-income neighborhoods as part of squatter-upgrading projects or sites and services projects for new low-income settlements. Additional community water taps can sometimes be added to existing mains with relatively little effort. Water distribution often can be improved greatly by installing balancing reservoirs.

In planning major new water mains, there may be political pressures to put them in low-density, high-income areas to the detriment of the urban poor. This underlines the importance of achieving changes in basic policies as a basis for project design and implementation.

Reuse of Waste Water. In some cases, waste water can be transferred from urban areas after primary treatment to agricultural areas, where it can be used for irrigation. Part of the steady flow of urban waste water may then be able to percolate through the soil, undergoing final purification and increasing groundwater reserves in the region. The replenished underground sources can be used to supply both urban and agricultural areas.

A very large-scale water regeneration program of this type has been proposed recently for Karachi, the largest city in Pakistan. This program would conserve scarce water resources, help to conserve the metropolitan region's soils, and reduce flooding. The scheme proposes to augment groundwater storage to about 3 million acre-feet. It should be able to provide a stable source of water for the region at acceptable standards through the year 2000 and beyond.[7]

Sewerage

Optimization of Existing Systems

High proportions of the populations of most developing country cities, even the larger ones, have no access to waterborne piped sewerage systems. They are forced to use open spaces, river beds, simple pit latrines, night soil collection systems, or communal cesspools. Use of urban open spaces clearly must be discouraged wherever densities are high. The use of simple pit latrines, however, may have to be accepted, even at quite high densities, if capital resources are scarce.

Latrines are often in a poor state of repair. They should be inspected and repaired to keep flies and animals away. It should also be ascertained whether they represent a threat to groundwater, especially if they are close to surface wells. Night soil collections can be improved by making collections on a regular basis and by using sanitary containers. Specialized trucks and other equipment can be used. Likewise, collection of wastes from cesspools can be improved. Collected wastes can be used in agriculture.

In one developing country with extremely scarce resources, the capital city, with a population of 600,000, has a sanitary sewerage system. It has been estimated that the cost of a minimum collection and treatment system for the most densely populated downtown areas alone would be in excess of U.S.$25 million. This cost is too high to be feasible in the foreseeable future. It is estimated that by 1986, there will be about 80,000 cesspools in the urban area, which should be cleaned out at least once every two years (about 40,000 per year). The current cost of such service is between U.S.$20 and U.S.$30, well beyond the means of most home occupants. A serious public health problem is the result.

A program has been designed using 80 to 90 workers, five small trucks, two special trucks, a disinfection installation, and a treatment plant for the sewage. Workers would empty the cesspools manually with small carts and hand pumps in the poorest, most densely populated neighborhoods and take sewage to large tank trucks, which would transport it to treatment plants. The initial capital cost of the system is about U.S.$730,000; annual costs would amount to U.S.$147,250. This would be a unit capital cost of about U.S.$9 and a unit annual operating cost of U.S.$3.68. The annual costs can be financed by the households involved if discriminatory pricing and cross-subsidization are used. Community education in use and maintenance of facilities should be emphasized as an important part of the improvement of traditional systems.

Upgrading and Maintaining Existing Networks and Sewage Treatment Plants. Greater efficiency in existing sewerage systems often can be achieved by simple measures, such as the replacement of manhole covers and repairs to trunk sewers. Incremental additions to the capacity of treatment plants may permit a more effective utilization of existing collection capacity. Controlling the disposal of street sweepings, grit, and other solids into open manholes may make it possible to use existing treatment plants much more effectively.

In some cases, imaginative low-cost modifications of existing conventional treatment plants can increase their capacities substantially. In one major city, where existing conventional treatment plants were operating at half capacity because of improper loadings and inadequate maintenance, a proposal was made that would increase their original design capacity by something of the order of 50 percent. Very modest investments and improved management were the inputs required. The scheme called for bypassing one element in the treatment process and accepting treatment standards somewhat below the original design standards but, nevertheless, perfectly acceptable in local conditions. The recuperation of original capacity and its augmentation by approximately 50 percent could be achieved at a fraction of the cost of adding new plant capacity to achieve a similar result.

Redistribution of Treated Wastes for Agricultural Use. Partially treated liquid effluent may be reused in agriculture. The treatment required will depend on how and in what quantities it is to be discharged. Sewage sludge may be useful as agricultural fertilizer and soil conditioner.

Additions to Systems

Traditional Systems. In areas that are not too densely populated, new pit latrines can be considered. This may not be possible where large-scale waste disposal might contaminate underground water, surface water, or surface soil.

In some cases, open surface sewers may be the best feasible solution. The risks of contamination can be minimized by separating them as far as possible from homes, covering them at least partially, and assuring that their outfall is into safe open water bodies or existing trunk sewers. If they must be close to residential or other major activity areas, it may be possible to organize communities so that people are responsible for maintaining the sewers serving them. Even in the poorest areas, standards of hygiene and maintenance in private or semiprivate, in contrast to public, space are often quite high.

Communal Cesspools and Septic Tanks. Communal cesspools and septic tanks are intermediate methods that may be appropriate in certain situations. If populations are dense and latrines cannot be built, cesspools may be the best solution. This may be especially true for densely populated staging areas, where residents and landlords are unable or unwilling to make substantial investments. As with individual night soil collection systems, cesspools must be periodically drained of waste. It may be possible to process that waste for use in agriculture.

Conventional Sanitary Sewerage. Conventional sanitary sewer connections are still preferable in a number of situations, especially for the more stable poor areas that are becoming permanently established in urban centers. Standards may be reduced through use of less expensive fixtures without compromising sanitation levels. If individual installations are not feasible, as in many squatter-upgrading programs, community facilities may be constructed reasonably inexpensively from a limited number of sewers in the project area. These can be combined with water outlets in bathhouses. Community and individual sewerage connections are important elements of most sites and services projects. Communal sewerage units must, however, be used very selectively and only if local cultural patterns and maintenance practices make them acceptable.

Incremental additions can be made to existing waterborne systems to permit their fuller use and to have them serve the needs of the poor. Additional collection points often can be added to existing sewerage lines at little expense.

It is important to combine such efforts with community education and maintenance programs. Supervision and training in the use of toilets will be necessary, especially for recently arrived in-migrants from rural areas. Attitudes toward defecation, privacy, and bathing are among the most ingrained. A considerable effort will be necessary to convince adults to change their habits and maintain new facilities at sanitary standards.

One major Asian city, which is expecting a population of 6.9 million by 1985, currently has only 20 percent of its households connected to the sewerage system. A project was formulated in 1973 to expand the system to serve approximately 800,000 households by that date. The project's cost was estimated to be about U.S.$213 million, including U.S.$95 million for new treatment plants, U.S.$22 million for trunk sewers, and U.S.$95 million for the collection network.[8] This represents a relatively modest cost of U.S.$266 per household connection, but even this is high relative to local incomes. Because of projected costs, stabilization ponds are now being considered as an alternative for at least part of the urban area.

Stabilization Ponds. One of the simplest and most cost-effective systems of sewage treatment is stabilization ponding. Although they require a waterborne sewage system, they are applicable on a variety of scales. They have been used in a number of countries in the past and deserve even greater attention.

Stabilization ponds have been referred to by a variety of names, including oxidation ponds, redox ponds, maturation ponds, sewage lagoons, anaerobic lagoons, and faculative lagoons. Stabilization pond is now regarded as the most appropriate term. It covers both aerobic and anaerobic stabilization. The technique is usable for the treatment of domestic sewage and some industrial wastes.

Stabilization ponds consist of little more than unlined tanks formed in the ground, with very simple inlet and outlet chambers. They can be of several types. Aerobic ponds are shallow, about .3 meters in depth, and are designed to maximize the growth of algae through photosynthetic action. They have been of interest where harvesting algae is important, but they have not been used widely in waste treatment. Anaerobic ponds are designed for higher organic loadings and usually are 2.5 to 3.7 meters in depth. An anaerobic pond functions as an unheated and unstirred open digester; its effluent will usually have a high biological oxygen demand (BOD) and require further treatment. Facultative ponds are relatively shallow, of the order of .9 to 1.5 meters, and their function is predominantly aerobic in sunlight and for part of the night. For the remainder of the night, the bottom layers of such ponds are generally anaerobic. Facultative ponds are becoming accepted increasingly as the type most appropriate for general application.

In addition to their simplicity and efficiency in treating wastes, stabilization ponds are productive and resource-conserving because they generate a series of useful by-products. The effluent can be used for irrigation. The pond itself can be used for pisciculture and raising ducks or other water fowl. Algae can be harvested for animal fodder.

A disadvantage of early stabilization ponds for urban application was that they were installed in such a way as to require relatively large amounts of land to achieve adequate surface areas. More recently, however, ponds serving large populations have been constructed in a series of smaller units close to the neighborhood populations they serve. Even if land prices are relatively high, this placement makes the technology more applicable than it was thought to be in the past. If land prices are extremely high, a somewhat more complicated application of stabilization pond principles can be used; this variation is generally referred to as aeration ditching and requires the mechanical agitation of wastes. Its capital and operating costs are higher than those of simple stabilization ponding.

The costs of a simple stabilization pond are remarkably low, a fraction of the cost of conventional forms of urban sewage treatment. In the 1970s in India, for example, where stabilization ponds have been used extensively, capital costs were of the order of U.S.$.50 to U.S.$1.70 per capita, excluding land costs. Operating costs were about U.S.$.15 per capita per year.[9]

Specialized Treatment. In order to relieve the burden on conventional treatment facilities, additional specialized treatment capacities may be considered. This may be especially useful for specific industrial wastes.

Nonwaterborne Technologies. One of the most promising new technologies is the clivus multrum, which can reduce toilet and kitchen wastes to a humus that can be used for fertilizer. It uses no water, has no effluent, and depends on natural organic decomposition. Its present cost is somewhat prohibitive, about U.S.$950 in the United States. A simplified version may soon be developed, using prefabricated concrete, which might be applicable for certain urban situations. The absence of system infrastructure and treatment facilities has the clear advantage of low investment costs. The fertilizer produced by the system is rich in nitrates, phosphates, and potash, much of which is leached out by conventional water-borne systems. Its market value would not be insignificant for poor urban families.

Drainage

Optimization of Existing Systems

The most vulnerable of the urban poor, especially those living in low-lying, flood-prone areas, suffer worst from the poor state of drainage systems in the developing world. In addition to the danger of physical damage and property losses, health conditions are notably worse among such households during periods of heavy flooding. Many existing drainage systems were designed to service much smaller urbanized areas. Moreover, as increased amounts of land are covered with pavement and housing, less rainwater is absorbed by the soil, and this exacerbates the problem of drainage overloads. Where sewerage systems are inadequate, large amounts of human waste in storm drains, particularly during floods, pose a serious health problem. Short-term actions can be taken to regulate street sweeping and the dumping of sewage into storm drains. In the longer run, actions will have to be taken to improve both refuse collection and sewerage.

Poorly planned urbanization and improper agricultural methods can cause erosion, which clogs storm sewers during floods. Where

this is a problem, natural drainage channels must be stabilized to control erosion. Sustained improvements in land use and the protection of ground cover are necessary long-term measures in such situations.

Several actions can be taken to alleviate some of the most immediate drainage problems. Drains can be cleared of mud; debris, channels, and pipes can be repaired; and manhole covers can be replaced. To reduce flood damage, this may involve establishment of regular clearance schedules before seasonal rains. Private maintenance of local drains can be encouraged. In some cases, local surface drains can be constructed relatively quickly to discharge into existing main drains and use existing capacity fully.

Additions to Systems

The effective control of flooding often will require the installation of new collectors drains and main drainage channels. The stabilization of natural drainage channels often can assist in optimizing the effectiveness of such additions.

In many cities, large numbers of the urban poor live on river banks and low-lying areas, which are prone to flooding. It is often necessary to construct protective levees and collector drains to make these areas habitable or move the population to areas not subject to flooding. In some cases, creating polders and pumping may be necessary to drain low-lying flood-prone areas.

A variety of long-term programs should be considered to control erosion damage. Urbanization can be regulated in erosion-prone areas. Check dams can be installed in areas above cities to slow runoffs and to build up groundwater levels. In addition, harmful agricultural practices, such as overgrazing, may have to be curbed.

In Port-au-Prince, Haiti, a port city of 600,000 inhabitants, about U.S. $170,000 is spent annually to maintain the storm draining systems. Much of this expenditure is necessary because of uncontrolled erosion from hills above the city and the lack of adequate garbage collection. In addition, the system was designed to serve a much smaller urbanized area. During heavy rains, serious flooding is caused by the compound effect of all these factors. An estimated U.S.$40,000 in damages is caused by each major rainfall.

A project costing U.S.$18 million has been proposed to amplify the capacity of the storm drainage system and build 500 small retention dams in the ravines above the city to reduce flooding and erosion. An additional U.S.$800,000 would be necessary to remove approximately 25,000 cubic meters of debris from existing storm drains and to open drainage ditches. It is estimated that U.S.$200,000 will be necessary to open channels on the seashore near system discharge points to permit storm water to flow freely.

The total U.S.$18 million will have little impact if erosion is allowed to continue from the hills above the city and if the solid waste collection system is not improved. This underlines the importance of coordinated action in several sectors. The seriousness of this problem is compounded by expected future growth. The population is expected to almost double in the next ten years. Most of this growth will be among extremely low-income families living in newly urbanized areas, many of which are prone to flooding.

Solid Wastes

Optimization

Traditional solid waste collection methods can be regulated and upgraded. The actions needed may include improvement to hand carts, better organization of the recovery of reusable wastes, and the organization and regulation of dumping. Where conventional truck collection, incineration, and sanitary landfill are already in use, they can be managed more efficiently.

Additions to Systems

Conventional Systems. Most cities in the developing countries must expand their conventional recovery, treatment, and disposal systems substantially to cope with growing quantities of solid wastes. Such programs are likely to benefit the urban poor directly. Low-income households usually are the principal victims of disease, rodent infestation, and other problems resulting from poor solid waste removal systems.

One large Asian city is faced with a typical solid waste problem. Approximately 1.2 pounds of refuse are generated per capita per day.* This produced a total of about 2,000 tons of garbage per day in 1973. The figure may be as high as 4,000 tons per day by 1985. A refuse collection program utilizing heavy duty 20 cubic yard compacting vehicles, two 20-ton per hour composting plants, eight bulldozers, 2,000 refuse bins, and development of disposal and landfill sites is

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*Rates of generation in developing countries are generally much lower than in the developed countries, where seven or eight pounds per capita per day may be generated. There is, necessarily, more careful use of almost everything.

under consideration there.* The development of such a large-scale program will require considerable staff training and user education.[10]

Resource-Conserving Recovering and Reuse Systems. Resource-conserving recovery and reuse systems may be appropriate in some developing countries. The economic feasibility of using such systems, or more labor-intensive ones, in the developing areas is likely to vary greatly among countries and among their cities. In many cases, scavengers already extract every salable item—old machine parts, used household utensils, scrap paper, metal, and so forth. Animals and tragically, poverty stricken adults and children often scavenge everything that is edible.

Potential Impact on the Poor

The potential impact of improvements in water supply and sanitation on health, productivity, environmental quality, land use, and land values was noted earlier. Projects can be of a great variety of types and capable of benefiting virtually all types of target groups.

The direct benefits of the optimization of existing systems will, by definition, accrue chiefly to existing or incoming households in areas already served. Improvements in health and productivity of those households, together with improvements in environmental quality and higher land values in the serviced areas, may also benefit households in nearby areas. All of the varieties of urban poverty groups are potential beneficiaries, even those without property rights or access to credit and even those who are externally oriented or in transit. The impact of improvements on health and productivity may well be sufficient to trigger upward shifts from one category to another. In general, in the absence of subsidies, the optimization of the simpler traditional systems will reach farthest down the income scale.

The benefits of additions to systems may similarly have an impact on virtually all types of poverty groups, in both newly serviced areas and in nearby areas. As in the case of optimization, traditional technologies will not be capable of reaching lower-income groups, but some simple modern systems, such as stabilization ponds, can benefit low-income households. For households who are externally oriented

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*The advisability of compacting wastes that contain a smaller proportion of cardboard and tin cans than do wastes in United States and European cities has yet to be evaluated, as does the economic feasibility of composting.

or in transit, systems with low investments in fixed capital are likely to be the most appropriate.

INSTITUTIONAL ASPECTS

Water supply and sanitation is one area of urban service in which areawide integration of resource management, supply, distribution, system maintenance, and pricing is particularly important. Water supply and sewerage are obviously interdependent. Less obviously, but just as importantly, drainage and solid waste disposal are also interdependent, at least when drains are used as dumping grounds. Each of these component systems can be weakened by deficits or malfunctions in one of the others.

In spite of these strong intrasectoral links, it is not uncommon to find water source development undertaken by one agency, bulk water supply by another, and water distribution by a third. Very often, one agency is responsible for initial system development, but another handles operations and maintenance. Solid waste disposal is typically considered unimportant enough to be relegated entirely to the local level.

If water supply, sewerage, drainage, and solid waste systems are managed separately and if system development is fragmented, it is unlikely that adequate services will be delivered or that any of the services will be financially sound. In many situations, the establishment of a single areawide entity responsible for bulk water supply, water distribution, sewerage, drainage, and solid wastes is desirable. Moreover, it will be desirable in most cases to have that entity responsible for planning, development, operations, maintenance, and the pricing of services. It may be necessary to approach such integration gradually, but to neglect it is likely to be detrimental to all of the services involved.

COMPLEMENTARY ACTIONS THAT MAY BE NECESSARY

As noted earlier, an expansion of water supply is likely to require the optimization and/or expansion of both sewerage and drainage systems. If an expanded sewerage system is to be fully effective, it may similarly require additional water supply. Both water supply and sewerage are likely to involve pumping, and this may require improvements in the generation and/or distribution of electric power.

Nationwide requirements for improvements in urban water supply and sanitation are likely to be of a scale that will require

substantial additions to system components. With simple technologies, in particular, there are likely to be many opportunities for adding to, or creating, domestic capacity for producing components rather than importing them.

An important reason for present water wastage and environmental pollution in many low-income areas is that public spaces are nobody's responsibility, even though private spaces are excellently maintained. It may be desirable to establish new patterns of residential land use, in which relatively small numbers of households are clustered around water supply and sanitation installations, so that it is in their own interest to maintain these facilities properly. Where such groupings exist already, even rudimentary traditional systems for water supply and sanitation usually are well maintained.

The regulation of agricultural land use to avoid overgrazing and other damaging agricultural practices may have to be introduced or improved, as noted earlier. Urban land-use regulations may have to be established or modified to achieve the full advantage of new water supply and sanitation systems as instruments for guiding urban growth. Land use must be regulated to avoid improper use of sanitary landfill areas. Both urban and nearby nonurban land uses may have to be regulated to control runoff and erosion.

If there are opportunities to reduce industrial water consumption and reutilize solid wastes efficiently, it may be necessary to provide credit, tax relief, or other incentives to encourage industries to initiate the new technologies.

OTHER LIKELY IMPACTS

Projects in water supply and sanitation may have a considerable variety of impacts that extend well beyond the urban poverty groups for which they are designed.

Benefits

Public revenues are likely to be increased in a variety of ways as a result of improvements in water supply and sanitation. Aggregate revenues may increase as a result of increased user charges for water supply and sanitation. Property tax yields may increase because of higher land values resulting from improved environments and new areas brought into development. Personal and corporate taxes may increase as a result of higher productivity.

Because improvements in water supply and sanitation will result in substantial improvements in health, the costs of providing health

services are likely to decrease. The public and private costs of rectifying flood and erosion damage are likely to decrease as a result of improvements in drainage.

Local environments are likely to be enhanced, sometimes dramatically, as a result of improvements in sanitation, increases in the availability of groundwater, and the creation of new water impoundment areas close to urban area. The value of property owned by middle- and upper-income groups, as well as low-income groups, is likely to increase as a result of improvements in water and sanitation. Water supply, sewerage, and drainage networks, together with transportation systems, can be used as major instruments to guide land use in the directions sought by government. The acreage of buildable land in an urban area may be increased by both the reclamation associated with sanitary landfill and by erosion control. Technologies introduced to reduce industrial water consumption in order to provide a greater supply for low-income households may result in overall reductions in per capita consumption. Decreases in commodity prices may occur in highly competitive industries that are large water users where costs are reduced or productivity increased as a result of improved water supply and sanitation.

Substantial increases in agricultural production close to an urban area may be achieved through reutilization of waste water and solid wastes.* Particularly in Asia, it is not uncommon to cultivate fish in large fresh water ponds, even within the boundaries of a built-up urban area. There and elsewhere, improvements in the quality of water bodies into which wastes are discharged and development of stabilization ponds capable of supporting fish life may together increase the output of the local fishing industry considerably.

Because of reductions in the incidence of communicable diseases, improvements in the health of low-income households are likely to result in improvements in health for middle- and upper-income groups.

The dramatic results that can be achieved through improvements in water supply and sanitation may provide concrete evidence of governmental concern for the poor, which will improve attitudes to government generally.

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*In Karachi, for example, it has been estimated that the regeneration of urban water and improved groundwater management could bring an additional 11,000 acres of land that is now semidesert into agricultural use in the immediate vicinity of the urban area in a ten-year period, as the first stage of an improved water management program.

Negative Effects

On the negative side, higher public capital and operating costs for water supply and sanitation are likely to be associated with service improvements of the types proposed.

It is desirable to make urban water supply and sanitation systems financially viable without across-the-board subsidies. It is likely to be necessary to increase charges to upper- and middle-income groups to achieve this.

Substantial improvements in water supply and sanitation may require the use of imported materials and equipment and foreign exchange that would otherwise be available for other purposes. In some cases, they may be a significant adverse effect on national balance-of-payments positions. For some industries that are large water and sanitation service users, production costs and prices may increase slightly as a result of increased user charges. Middle- and upper-income groups typically use large quantities of water for gardens and other private environmental improvements. Particularly, in the short run, and especially if a government is serious about redistributing existing supplies, there is likely to be localized environmental deterioration as a result of reduced water consumption by such households. Large-scale new water impoundments may considerably reduce the acreage of land available for agriculture. Because waste water is likely to contain relatively high percentages of dissolved solids, there may be some reductions in usable agricultural acreage as a result of large-scale waste water regeneration; there may be increased salinity. In assessing the desirability of projects, such reductions should be accounted for, together with the additional acreage that is expected to be brought into production. There may be localized increases in soil and groundwater pollution as a result of expanding traditional sewerage systems in low-income areas where these are the only economically feasible systems in the near future.

As suggested earlier, middle- and upper-income households and entrepreneurs experiencing higher user charges are likely to mobilize political opposition to such changes. The importance of such a reaction will obviously depend on local conditions. The possibility of such a reaction may be serious enough to preclude some improvements in water supply and sanitation, which are highly desirable from an equity point of view.

NOTES

1. International Bank for Reconstruction and Development, Water Supply and Sewerage, Sector Working Paper (Washington, D.C.: IBRD, 1971), pp. 6-7.

2. International Bank for Reconstruction and Development, Health Sector Policy Paper (Washington, D.C.: IBRD, 1975), pp. 19-21.

3. Planning and Development Collaborative International, Low-cost Sewage Treatment for San Salvador, Santa Ana, San Miguel, Sonsonate and Usulutan: With Supplementary Materials on Opportunities for Improving Water Supply in San Salvador (Report prepared for the Administracion Nacional de Acueductos u Alcantarillados) (San Salvador, El Salvador: PADCO, 1977).

4. Karachi Development Authority, Master Plan Department, Karachi Development Plan, 1974-1985 (Karachi, Pakistan: Karachi Development Authority, 1974).

5. H. I. Riegel, "Waste Disposal at the Fontana Steel Plant," Sewage and Industrial Wastes 24 (1952): 1121.

6. Karachi Development Authority, Master Plan Department, op. cit.

7. Ibid.

8. Ibid.

9. S. J. Arceivala et al., Waste Stabilization Ponds: Design, Construction and Operation in India (Nagpur, India: Central Public Health Engineering Research Institute, 1970).

10. Karachi Development Authority, Master Plan Department, op. cit.

7

PROJECTS IN HEALTH SERVICES

ROLE OF HEALTH SERVICES

Since World War II, considerable progress has been achieved in the field of health in the developing countries.[1] Average life expectancy at birth has increased from 32 years to 49 years. The incidence of serious epidemics has been reduced significantly. Nevertheless, large differences in levels of health still exist between developed and developing nations. Average life expectancy in the most developed countries is about 70 years, reflecting lower infant mortality rates than in the developing countries. Equally distressing are differences in levels of health within countries, both between rural and urban areas and between the urban poor and more affluent urban groups.

Infections and parasitic diseases together with malnutrition constitute the major health problem of most developing countries. Fecally related diseases, airborne diseases, and malnutrition account for a majority of deaths among the poorest households, particularly among children below the age of five.

Diseases transmitted by human feces are probably the most widespread. Among the most common diseases are intestinal parasitic and infectious diarrhea, poliomyelitis, typhoid, and cholera. The World Bank study notes that the category "bacillary dysentery and amoebiasis, enteritis, and other diarrheal diseases" was the leading identified cause of death in Paraguay (1971), Guatemala (1970), and El Salvador (1971).[2] In Pakistan (1972), the category "all forms of dysentery" was the most frequently noted communicable disease. A death rate of 3,446 per 100,000 infants as a result of acute diarrheal diseases was reported in a study in Punjab, India. In Iran, Venezuela, and the Arab Republic of Egypt, the monthly incidence of diarrhea

among preschool age children has been estimated to be between 40 and 50 percent.

Airborne diseases spread by the respiratory secretions of infected persons include tuberculosis, pneumonia, diphtheria, bronchitis, whooping cough, meningitis, influenza, measles, smallpox, and chicken pox. According to governmental figures, they accounted for 24 percent of reported deaths in Bolivia (1971), 29 percent in Guatemala (1970), and 19 percent in Chile (1972).

Widespread malnutrition is characteristic of poor areas and contributes to the incidence and severity of health problems. It poses a major threat to children. In some locations in Latin America, it is a primary cause of death of children under five years of age.[3] Malnutrition also contributes to premature births and abnormally low weights at birth. It is a major factor in the incidence of infectious diseases because it impairs normal responses to disease and reduces immunity.

The poor socioeconomic conditions under which low-income urban groups exist in the developing areas are probably more important as determinants of levels of health than health services.

> Secular increases in health standards in Western Europe and North America were brought about much more by rising living standards and improving socioeconomic conditions than by medical care per se. For example, the incidence of cholera and typhoid fell in Britain and the United States long before effective methods of treatment were available. . . . in the United States, tuberculosis deaths went down from 200 per 100,000 population in 1900 to 3 per 100,000 in 1967. Yet sanitoria and collapse therapy for treatment of tuberculosis were not widely available until the 1930s—when the death rate was already down to about 70. Chemotherapy became available only in the 1950s when the rate was below 30.[4]

Typically associated with low incomes are high residential densities, which facilitate the spread of communicable diseases, malnutrition, and poor water supply and sanitation. Unless these conditions are rectified, curative and other health services, even if undertaken on a large scale, are unlikely to have sustained success.

> Sophisticated health approaches are inappropriate unless backed up by outreach and preventive service. . . . A medical school program for hospital care of premature infants in Colombia achieved survival rates comparable to those in North America, but 70 percent of the infants

discharged from the premature nursery were dead within three months.[5]

Investments in health for the urban poor should be seen as productive investments. The economic costs of ill health include reductions in the availability of labor, reductions in the productivity of employed workers and capital goods, and waste of current resources, particularly nutrients. Workers suffering from parasitic diseases and malnutrition may simply be incapable of putting in a full day's work. The slum dweller accused of being lazy may be as efficient as possible, since few of his or her middle-income critics would probably be able to achieve more on a handful of rice a day. The concentration and learning potential of children is similarly reduced by ill health.

Better preventive services can reduce the need for expensive periodic treatment. Moreover, good health should be considered a basic social goal because of its importance in helping the individual realize his or her full potential in all aspects of life.

Although the rural poor often have more limited access to health services than do urban dwellers, the low-income urban household faces deficits in health services (and under much more crowded living conditions). The consequences of deficiencies in water and sanitation are much more severe than they are in lower-density rural areas. In the lowest-income countries of Africa and Asia, major epidemics still pose a serious threat to urban populations. Calcutta is a central source of cholera for other areas in Asia. Karachi exports malaria not only to the rest of Pakistan but also to other parts of the world.

POLICY IMPLICATIONS

Relative Emphasis to Be Placed on Health Services and Other Measures

Levels of expenditures on improved health services for the urban poor should be established as integral parts of overall development programs. Resource conservation, efficiency, equity, and humanitarian considerations will all be of concern in trying to achieve a satisfactory pattern. Employment generation, housing, education, and other sectors compete with health for funding. Within the sectors most directly relevant for health itself—water supply, sanitation, nutrition, health services, and housing—it is necessary to establish priorities. From a health point of view, expenditures in other sectors may sometimes be more cost effective than expenditures on health

services. In comparing immunization and sanitation measures against cholera, for example, it has been found that vaccination gives only about 50 percent protection from cholera for four to six months—at a per capita cost of about U.S.$ 15. Under what have been described as favorable conditions in the Philippines, simple latrines were built for about U.S.$1 per latrine, excluding self-help labor—a per capita cost of about U.S.$.15. Such latrines, if properly maintained, cut cholera rates by about 60 percent. Even when maintenance and replacement costs are taken into consideration, latrine construction was, in that case, more cost effective than immunization. It was estimated that if the cost of latrines was three times that of immunization, then the latrine program would be cheaper after the sixth year.[6]

Curative services are unlikely to have lasting results if preventive measures are not adequate—especially in the face of rapid low-income urban growth. For a given level of expenditure, the coverage of preventive services can be much greater than that of curative services. Moreover, preventive services make it possible to avoid a great deal of human suffering when disease is followed by subsequent cure.

It is probably necessary to train large numbers of paramedical personnel to make it possible to deliver preventive and simple remedial services on an adequately large scale, together with a relatively small number of fully trained general practitioners and specialists. It will be important to establish salary levels and medical employment policies that will encourage trained personnel at all levels to remain and work in the areas of greatest need. Many developing countries are losing skilled medical personnel—in particular, to other countries offering higher salaries and/or better working conditions. In many cases, it may be wise to accept traditional medical practitioners as potential contributors to improved health services and supplement their skills with additional training. It may be appropriate also to mobilize military personnel, the educated unemployed, and others with appropriate skills to provide paramedical services.

The need for dramatic improvement in urban health, particularly the health of the urban poor, is clear. But it must be remembered that many developing countries have 80 percent or more of their populations in rural areas, and those rural populations also have severe health problems. In some regions, those problems are of crisis proportions (for example, where malaria, bilharzia, and river blindness are still prevalent). It is therefore important to establish basic strategies and resource allocations for rural and urban health services that reflect national priorities for productivity, equity, and the relief of suffering.

Public and Private Responsibility for Health Services

In most countries, health services are delivered by both the public and private sectors. The quality of services each sector is able to deliver and the population they are able to serve are usually quite different. The best private services are generally available only to middle- and upper-income groups. Low-grade private services are often available to at least part of the low-income population, but their efficacy varies greatly. Public services, on the other hand, are usually available (in principle) to all, but their general lack of quality means that lower-middle and low-income groups are their only clients.

In some cities, resources are so limited and health administration so poor that even public services are limited in scale, as well as economically out of reach of many households (for example, patients in some public hospitals are expected to pay for all their medicines). In some cases, health facilities exist but with insufficient funds for proper staffing, and the services they deliver to the poor may be no better than those available in the part of the private sector that already serves low-income groups.

A basic argument for the public provision of health services is that the private market cannot be expected to generate a mix of services or price those services in a way that is desirable from a social point of view. For example, services that restrict the spread of communicable disease yield benefits to an entire community. The individuals initially afflicted should not be expected to pay for the total cost of the services. Moreover, some of the measures necessary to restrict the spread of a disease (for example, malaria control measures) have no specific client against whom charges can be levied other than the community at large.

The relative abilities of the public and private sectors to deliver services to low-income groups will vary greatly from place to place. In each case, it is important to apply the same types of productivity, equity, and humanitarian criteria that should shape other aspects of health policy in order to determine the extent to which the private sector is to be encouraged to provide services for the poor.

PROJECTS WITH A POTENTIALLY HIGH IMPACT ON THE URBAN POOR

The selective expansion of conventional curative services is likely to be an important part of overall programs designed to improve health services. However, projects associated with this will not be discussed here because they are not specifically for low-income households. It should be noted, however, that in the expansion of such

services for the community at large, it is important to ensure that general curative services are made more readily available to low-income groups—for example, through discriminatory pricing of those services with cross-subsidies. Specialized curative services that will be particularly relevant for low-income groups are discussed below.

Expansion and Upgrading of Preventive Services

Immediate, as well as long-term, benefits for the urban poor are likely to be achieved through improvements in preventive services. Those services will in general be extendable to all income levels. The basic components of preventive service projects are likely to include regular health surveillance, the regular dissemination of information on desirable health measures and the services available, inoculation and vaccination, instruction in personal hygiene, nutrition, mother and child care, and family planning. For the staffing of such services, considerable reliance can be placed on paramedical personnel. Training programs should be established to generate an adequate supply of such personnel. Services can be delivered through both clinics and mobile units that visit low-income areas regularly. Because of the scale of services needed in many urban areas, paramedical staff can be trained and used efficiently in a variety of relatively specialized areas of preventive medicine—for example, inoculation and vaccination, personal hygiene, nutrition, mother and child care, and family planning—and this may help to simplify and shorten training periods.

China provides one of the most dramatic instances of the development of effective preventive services.[7] During the 1930s and 1940s, the leading causes of death there were infectious diseases, parasitic diseases, and malnutrition. Today, at least in large cities, such as Shanghai, the leading causes of death are similar to those in the developed Western nations—cancer, stroke, and heart disease. In 1949, the population of China was estimated to be 540 million, about 15 percent of which was urban. In all of China, there were then approximately 40,000 Western-style physicians and perhaps 90,000 beds in Western-style hospitals—a gross ratio of one physician to 13,000 potential patients and one bed to every 6,000 patients. Most of these resources were conc rated in a few cities, and even in those cities, most of the popula .. depended on practitioners of traditional Chinese medicine for whatever care they received.

In 1949, the government of the People's Republic introduced a dual program to confront this problem. One part of the program was focused on mass movements aimed primarily at public health and sanitation; the practitioners of traditional medicine were enlisted in

overall health services. The second part of the program focused on training large numbers of new health workers, with special concern for middle-level personnel, and the establishment of "centers of excellence." These centers were urban training facilities that were expected to pioneer new medical techniques and provide a flow of skilled personnel to areas of special need.

In the training component of the program, students who reached the intermediate levels of the secondary school system were sent to middle medical schools for a three-year course, which prepared them to work as assistant doctors. The middle medical schools also trained nurses, midwives, technicians, and pharmacists. There was an expansion in the existing program of higher medical education. The period of study at the higher medical schools was five or six years, with students recruited from those who had completed the senior level of secondary school. The most advanced form of medical training was provided at the China Medical College in Peking, where there was an eight-year curriculum aimed at developing teachers and research personnel.

Even though this was an ambitious and relatively successful program (by 1965, it had produced more than 100,000 new physicians and some 170,000 assistant doctors), it was not sufficient to cope with the growth in urban population (which, by 1965, had reached approximately 125 million) or redress the imbalances between rural and urban areas. In 1965, an additional thrust was initiated to achieve greater equity in health services for the rural population. At the same time, improvements in services were continued in urban centers, following a pattern of decentralization similar to that utilized for rural areas.

In Peking proper (the urban core of a metropolitan region, which includes a large rural population), each of the nine urban districts has an average population of 400,000. The city's municipal medical services include four specialized research hospitals and 23 general hospitals (with ten of the general hospitals having more than 500 beds). Each of the nine districts is subdivided into neighborhoods.

One such neighborhood (Feng Sheng) has a population of 53,000. There is one municipal hospital in the West District, to which Feng Sheng belongs, where Feng Sheng neighborhood patients are sent if care at one of the specialized hospitals is not required. Within the Feng Sheng neighborhood itself, the only hospitallike facility is exclusively for out-patient care. The staff of 90 in that facility includes seven Western-trained physicians and 20 practitioners of traditional medicine, 31 nurses and technicians, 18 administrative and other personnel, and 14 trainees.

The public health department is responsible for supervising the urban equivalent of rural aid stationers, which are staffed by barefoot

doctors, midwives, and health aides. A barefoot doctor is responsible for treating minor problems, such as light injuries, gastrointestinal illnesses, colds, and bronchitis. He or she administers immunization against diphtheria, tetanus, whooping cough, measles, smallpox, poliomyelitis, encephalitis, and meningococcal meningitis. In a rural area, he or she also supervises the collection, treatment, and storage of human excreta for use as fertilizer.

Actual work may be overseen by health aides, but the responsibility is the barefoot doctor's, as are continuing campaigns against pests, such as flies, fleas, cockroaches, and snails. In a rural area, the barefoot doctor divides his or her time about equally between farm work and service at the health station.

In Feng Sheng, the public health department supervises 25 health stations operated by lane committees out of 132 lanes. Each of the 25 lane committees, therefore, represents the residents of five or six lanes, or some 400 families. Each lane committee health station is staffed morning and afternoon by local housewives, who have the title Red Medical Worker. A Red Medical Worker learns how to take a medical history and how to conduct simple physical examinations, including such routines as measuring blood pressure. This worker is instructed in the use of a number of drugs, both Western and traditional, and is likely to have learned the techniques of acupuncture and intramuscular and subcutaneous injection. A physician from the neighborhood medical facility provides support services for a health station.

Although the People's Republic of China has far to go to solve its medical problems, the progress that has been made is impressive. The effectiveness of the urban effort in birth control, for example, is provided by the records of one lane committee health station in the city of Hang Chow. Data for 1971 from a sample of 369 married couples with wives of childbearing age indicated that 24 percent of the women and 3 percent of the men had been permanently sterilized. Another 27 percent of the women and 19 percent of the men regularly used contraceptives, and the crude annual birth rate for the population served by the lane committee health station was remarkably low—eight per 1,000.

Birth statistics for Shanghai in 1972 are also impressive. The reported rate for the city proper was 6.4 per 1,000; for the entire independent municipality, it was 10.6 per 1,000. (In 1972, the lowest rate in any of the 50 states in the United States was 12.6 per 1,000 in Maryland.) The 1972 crude death rate for Shanghai was reported as being 5.6 per 1,000. If the birth and death rates are correct, the city's natural growth rate is less than .001 percent—one of the lowest natural growth rates in any urban area in the world.

Regular exercise is also given an important place in urban preventive medicine. Accepted by traditional Chinese medicine as something more than simple body building, exercise is used as part of both physiological and psychological therapy.

Expanded curative services for reaching the urban poor may be provided through specialized facilities or in conjunction with preventive services. Appropriately trained staff can treat minor injuries, gastrointestinal problems, colds, bronchitis, and similar ailments that do not require highly specialized hospital facilities. Staff members can acquire the skills necessary for this relatively rapidly. An essential feature of a system incorporating facilities of this kind is a referral process, by which rudimentary curative centers can refer patients to more sophisticated health centers.

In addition to the limited expansion of general curative services for the community-at-large, many urban areas should give a fairly high priority to expanding specialized curative services to deal with illnesses to which low-income households are particularly prone—tuberculosis, venereal disease, cholera, smallpox, typhoid, leprosy, pneumonia, diphtheria, meningitis, and tetanus among others. Treatments for some of these illnesses, such as cholera, have been greatly simplified in recent years, but a number of curative services that will be important are likely to require relatively capital-intensive technologies and the services of skilled medical professionals.

Environmental Measures

In addition to upgrading water supply and general environmental sanitation, cities in some parts of the developing world will require special environmental measures to combat vector-borne diseases, such as malaria, sleeping sickness, bilharzia, and river blindness. Some of these are prevalent chiefly in rural areas, but some of them are still major problem in urban centers, such as Karachi (where malaria is still prevalent) and Guayaquil, Ecuador. Current efforts to control malaria in Karachi include, for example, improvements in drainage and the aerial spraying of DDT.

Improved Health Information

Health projects of the types described can be designed to reach all of the varieties of poverty groups discussed earlier. However, for either preventive or curative services to reach the lowest-income households on a sustained basis, education and the proper dissemination of information are likely to be essential project components.

Flows of information must be in two directions—with the poor properly informed of the services available and the procedures for taking advantage of those services and with service agencies regularly and properly informed of the health of their target populations.

INSTITUTIONAL ASPECTS

Organization and Staffing

It will be necessary in many cases to make a number of organizational changes in the administration of health services in order to achieve a much greater emphasis for preventive services and greatly extended coverage. At the same time, it is essential to ensure that low-income groups take advantage of expanded services. To achieve this, it will often be necessary to bring services closer to the user. The measures by which this might be achieved include decentralization of health administration, wide geographic dispersal of health services centers, and provision of mobile services that make regular visits to low-income areas. To get services closer to the user in a cultural sense, as well as a geographical sense, it will often be advantageous to use traditional practitioners of medicine—herbalists, naturopaths, and so forth—who already have the confidence of low-income groups.

To achieve appropriate reorientation and extended coverage, it will be particularly necessary to expand staffs responsible for delivery of preventive services. This may mean training large numbers of paramedical personnel.

The community health worker should be stationed in (and preferably reside in) the area he or she serves. He or she should be integrated into the local social structure so that he or she can identify the disease without waiting for contact to be initiated. Wherever possible, the community health worker should make periodic house visits. He or she may be able to enlist the support of local political, social, or religious organizations in order to maintain a continual surveillance of health conditions. One study suggests the desirability of community involvement in selecting basic health workers who, in many cases, would also have other sources of employment. That study suggests that the health worker

> would receive brief training in treating some of the most common diseases. Training in clinical skills would be very limited; complicated cases would have to be referred to health centers, district hospitals or possibly traditional healers. The limitation on the curative skills of the health worker would be desirable to insure adequate time for

> environmental and preventive work. The worker would be taught the fundamentals of maternal and child care, of delivery, and of monitoring the growth of young children, particularly for nutritional problems. The worker would organize mother craft sessions for feeding malnourished children and the nutrition education of mothers, provide immunizations, and be responsible for encouraging family planning.
>
> The worker would also be responsible for organizing community efforts in environmental health, water supply and sanitation.[8]

Under a system emphasizing the role of basic health workers of this type, it should be possible to achieve an appropriate level of demand for services, as well as an adequate supply. The activities of basic health workers could be supervised by a series of more specialized professionals who, at each level in the hierarchy, would be capable of delivering more sophisticated services. To use such a staffing strategy effectively, it would probably be necessary to establish procedures and drugs that are simple to use and as inexpensive as possible. One criterion for choosing procedures or drugs could be that they would generally improve health condtions, even if they were not administered optimally.

Financing

As suggested earlier, it is neither feasible nor appropriate to fund expanded health services entirely through user charges. A large part of funding would have to come from the community at large. To make whatever funds are available more effective in achieving extended coverage, it might be necessary to directly discourage construction of new facilities for sophisticated curative services. It would usually be desirable to subject all existing and proposed health services to thorough cost-effectiveness analyses. The World Bank study suggests that too much is presently spent on in-patient services, compared with out-patient services in many situations. Through innovations in treatment, it may also be possible to reduce the length of stay of in-patients. There may be opportunities for achieving reductions in the wastage of drugs, improvements in the maintenance of buildings, and improvements in the maintenance and operation of equipment.

On the subject of pricing, the World Bank study suggests that

> the system of pricing government health services is particularly important, not only for mobilizing funds but also for

resource allocation in the health sector. It is important to devise methods for discouraging malingerers and those inclined to use sophisticated medical facilities irrespective of need. A policy of full-cost pricing of health services would create substantial financial incentives for people to avoid hospitals (particularly in-patient services) and to rely instead on less expensive visits to out-patient facilities and local health posts. Such a scheme would also mobilize some funds for the government to finance activities for which it cannot charge users. It is tempting to introduce different charges for the rich and the poor, if at all administratively feasible, but care should be taken that this does not encourage the expansion of higher revenue-earning services for the rich rather than services for the poor.[9]

Participant Mobilization

If improvements in health services are to have a sustained beneficial impact, they must be understood and supported by the members of low-income households. Communal environmental sanitation, personal hygiene, alertness to the onset of a health problem, and seeking early treatment must become a part of daily household routine. This is likely to require, among other things, promotion of health services and sound household health practices in workplaces and other gathering places, such as markets, community service centers, and schools. Substantial use should be made of mass media for health promotion. Local community leaders should be engaged, together with traditional healers, as fully as possible in regular health surveillance and in the dissemination of information on health.

COMPLEMENTARY ACTIONS THAT MAY BE NECESSARY

Perhaps the most important single type of complementary action to reinforce improvements in health services is the achievement of increased employment and productivity. In many situations in the developing countries, the health problem is very largely an income problem. As noted earlier, improvements in health in developed countries have often been associated with general improvements in socioeconomic conditions and have preceded improvements in health services technology.

A second obviously necessary type of complementary action is upgrading the water supply and environmental sanitation. For some

purposes, these will be more cost effective than improvements in health services themselves.

A somewhat less obvious, but nevertheless important, type of action will be the improvement of communications and transportation for the poor to provide better access to upgraded health services. In many low-income areas at present, deficits in communications and/or transportation result in delays that are very damaging, or even fatal, in gaining access to appropriate services. Things that are taken for granted in the developed world--for example, making a telephone call for an ambulance—are simply impossible in developing countries. The provision of public telephones in community service centers, expansion of ambulance services, and upgrading of general transportation are likely to all be important.

The structuring of overall land use should obviously make proper provisions for placement of local, as well as areawide, health facilities and every effort should be made to achieve densities that will help reduce the incidence of airborne diseases. Very often, however, high densities will be inevitable in the near future in low-income areas. This serves to reemphasize the importance of adequate environmental sanitation.

Because malnutrition is such a basic cause of many health problems and because it increases the severity of many illnesses, improvements in agriculture and food distribution will be important complementary measures to increase the supply of essential food stuffs for the poor.

OTHER LIKELY IMPACTS

Because health affects so many aspects of life, the impact of health projects for the poor are likely to extend well beyond low-income groups. Improvements in the health of low-income households are likely to result in greatly reduced health hazards for all other members of the community. The increases in productivity associated with improvements in health are likely to result in higher total urban output. They are likely to result also in higher profits and incomes for the middle- and upper-income groups who employ low-income workers. Public revenues are likely to be increased indirectly, through the impact of improved health on corporate profits and land values.

Apart from the increased public expenditures necessary to improve services, there are likely to be very few negative effects. Perhaps the most marked will be increased availability to public health services for middle- and upper-income households, but such households often will be able to substitute private services for public

services and, as noted earlier, may rely chiefly on private services already.

NOTES

1. The World Bank, Health, Sector Policy Paper (Washington, D.C.: World Bank, March 1975).
2. Ibid., p. 10.
3. Ibid., p. 11.
4. Ibid., pp. 14-15.
5. Ibid., pp. 22-23.
6. Ibid., p. 31.
7. Victor M. Sidel and Ruth Sidel, "The Delivery of Medical Care in China," Scientific American 230, no. 4 (1974): 19-27.
8. The World Bank, op. cit., pp. 43-44
9. Ibid., p. 42.

8

PROJECTS IN EDUCATION

ROLE OF EDUCATION

Much has been done in recent years to expand educational systems in the developing countries. During the ten-year period 1960-70, school enrollment at all levels in the developing world, excluding the People's Republic of China, increased dramatically—from about 140 million students to 250 million students, an increase of about 80 percent.[1] It is now common for governments to spend 20 percent or more of public budgets, often up to 5 percent of the gross national product (GNP), to finance educational programs. In view of the development priorities of other sectors, however, economists and education planners have begun to question the high levels of resources committed to education. Many governments are seeking ways to reduce the costs of education and broaden its impact.

The most critical issue is the massive scale of the problem in many of the world's poorest countries and the lack of adequate resources to deal with it. The United Nations Educational, Scientific, and Cultural Organization (UNESCO) has estimated that the number of adult illiterates will increase in absolute terms in the developing countries during the next decade to about 865 million.[2] Thus, one of the principal challenges in the design of educational systems will be to increase their coverage substantially relative to their costs.

Even in countries where primary school enrollment and literacy are relatively widespread, educational programs are often characterized by a serious lack of relevance to current economic and social needs. In many cases, educated graduates from primary and secondary schools are unable to find productive employment. The problem of semieducated unemployed youths has reached striking proportions in

some countries, which otherwise appear to be achieving considerable success in education.

One of the most notable examples of such a country is Sri Lanka.[3] The growth of its educational system has been impressive in statistical terms. By 1970, educational expenditures accounted for about 5 percent of GNP. Nevertheless, the system was failing to respond to a number of major national development needs. The educational system had become a narrow-ended funnel for channeling graduates into a relatively limited amount of formal sector employment. Large numbers of dropouts and primary and secondary school leavers had not been provided with educational backgrounds suitable for employment as farmers or manual workers.

The system was channeling young people into the labor market on the basis of their abilities to achieve in various levels of schooling. Learning skills useful to national development was secondary, as students competed for good jobs. The negative effects on national productivity and growth, as well as on social equity, were clear. Many potentially productive young people remained without useful skills; those who achieved good jobs viewed them as rewards to which they were entitled rather than as an opportunity for productive employment.

The poor were far less likely to pass through the system. Large percentages of poor children could not afford education or could not compete with more culturally advantaged affluent students. Poorer dropouts and many primary and secondary school leavers were not prepared for employment outside the modern sector. They could only swell the ranks of the urban unemployed and the politically discontented. The system thus tended to perpetuate inequalities in income and the duality of the economy and employment structure.

A similar situation has been observed in Kenya, where the unemployment of youth is also a serious problem.[4] Overall progress in education has been considerable, with primary enrollment rising by 60 percent between 1963 and 1970. This quantitative success, while impressive, is overshadowed by structural and qualitative weaknesses. Only 14 percent of primary school leavers were able to enter governmental secondary schools. Nevertheless, primary school is almost exclusively oriented toward selection for secondary school. Students are prepared mentally for nonrural modern-sector employment in an economy that has not produced enough urban jobs. This tendency has been exacerbated by manpower planners, who have been concerned until recently with producing skilled personnel for the high-level jobs occupied by foreigners.

In recent years, there have been numerous efforts to rectify inequalities in education. Many of these efforts have been focused, understandably, on the differences between rural and urban areas

(because of the magnitude of existing inequities). They tend, however, to underemphasize the inequalities in education that exist within urban areas. For example, an appraisal of squatter settlements in Lusaka, Zambia, showed that there was only one school in all of the city's squatter settlements. About 50 percent of the capital city's population was virtually unserviced. In the squatter areas, primary school enrollment was only 36 percent, compared with 90 percent in the rest of the capital.[5] Similar conditions have been noted in many other cities in the developing world.

POLICY IMPLICATIONS

The educational systems in many developing countries often do not achieve their qualitative or quantitative objectives. Existing resources important to the success of educational programs are being utilized inefficiently. Some resources remain untapped because of traditional approaches to curricula and to the administration and financing of education. The development of high-impact projects in urban education has many implications for changes in policies in each of these areas.

The lack of meaningful curricula is a basic problem in the educational systems of most developing countries. Rote learning limits the development of students' creativity and imagination. As noted above, broad curriculum reform is a necessary complement to programs specifically designed for the urban poor. This usually requires new materials and changes in teachers' attitudes and methods.

Curricula in primary schools are heavily weighted to favor students entering secondary schools; examinations based solely on achievement become a critical and often unfair determinant of a child's future. It is therefore important to consider changes that will produce a broader, more usable education for those who will have to work outside the modern sector.

In many of the developing countries, responsibility for the administration of educational programs is often dispersed throughout many ministries, with little if any coordination. In local communities, this lack of coordination often is exacerbated by a shortage of middle-level managers, the inordinate growth of political influence and power among teachers, and an almost complete lack of effective parental participation in the educational process. The resulting confusion among politicians, educators, and parents about educational policies and objectives often results in chaos. Changes in administrative policy should be considered to provide decentralized local community mechanisms for linking institutions, administrators, teachers, and parents

as active agents in designing and implementing educational programs that are relevant to local needs.

The financing of education throughout the developing world is frequently regressive, and this calls for institutional as well as policy changes. These will be discussed later.

Rural Education

Improved rural efforts in education may have some impact on urban areas. In the past, rural school leavers have migrated in large numbers in search of urban employment. The presence of better schools and teachers in urban areas has itself been cited as an important cause of rural-urban migration. It is now hoped that rural vocational preparation which is more relevant to the needs of the rural poor will help to limit this tendency. However, the almost universal aspiration for higher-level education and status makes the ultimate effects of these efforts on rural-urban migration difficult to predict.

Many current efforts in education are being directed toward the improvement of rural systems. A number of countries are experimenting with ways to expand rural education and make it more relevant to the needs of farmers' children. Experiments are being undertaken with nonformal vocational training, adult literacy, and mass media delivery systems.

Need to Rectify Imbalances in Labor Markets

There is some tendency to blame educational systems for too many of the problems of developing countries. While it is true that unemployment, ill health, and urban migration can be attributed at least in part to deficiencies in education, these problems often originate also in basic structural imbalances. Effective change must therefore include complementary reforms in a number of other sectors.

Urban elites pursue higher levels of education because of large potential private gains. Raising the productivity and remuneration of lower-level employment could remove some of the private incentives for excessive education. This is a very important consideration, which is basic not only to the success of educational strategies for the poor but also to the success of the types of industrial and commercial development outlined in Chapter 5. The policy implications of these two chapters are closely interrelated.

PROJECTS WITH A POTENTIALLY HIGH IMPACT ON THE URBAN POOR

Policy measures of the kinds listed above can have a beneficial impact on the urban poor. They can also affect large numbers of the rural poor and even middle- and upper-income groups. The discussion here will be limited primarily to types of educational projects that are related directly to the development efforts of the urban poor.

Nonformal Educational Programs in Nutrition, Health, Sanitation, Family Planning, and Household Management

The importance of incorporating educational components in health programs was referred to in Chapter 7. Nonformal education is a potentially important component of health and family planning programs in developing countries. People need basic information about the care and feeding of children, the delivery of babies, the preparation of food, disease prevention and treatment, the protection of water, and the disposal of human and other wastes. Community educational campaigns concerned with mass vaccination, environmental sanitation, rodent and insect extermination, and other related programs can help to develop new attitudes about health and encourage individuals to improve health standards. Informal education in household management and budgeting can help both new and established urban householders to use their meager incomes as strategically as possible.

Many health programs do not take full advantage of the potential of nonformal education. It can be an especially important component of health service delivery programs for prenatal and lactating mothers and for recent in-migrants, who need orientation to urban health and sanitation requirements.

The most recent endeavors in large-scale health education have involved health promoters who make family visits, especially to counsel expecting and new mothers on child care and nutrition. Radio and other media have also been used effectively.

Urban health centers have been important focal points of community health education. One center, Chetla, in Calcutta, organized mass campaigns in smallpox vaccination, cholera prevention, environmental sanitation, and family planning. It also provided consultation on malnutrition and educational services to schoolchildren. This pattern of community involvement through education linked with the provision of health services is becoming increasingly common.

Birth control is an intensely emotional subject in most countries. Old attitudes must often be changed; contraception techniques must be

learned. This requires a well-planned, nonformal educational component in family planning programs. Family planning education is likely to be especially difficult where governmental agencies are not available as sponsors, although most countries have at least some form of voluntary organization active in family planning. Family planning information often is most effectively presented in groups where peer group reactions can facilitate changes in cultural attitudes. Personal contact by paraprofessionals (often linked to health education) has also proven to be quite effective. Experience in India has shown that conventional clinics are relatively ineffective in the dissemination of family planning information because of poor communication with the poorest elements of the population.

Women who have recently given birth are frequently the most receptive to family planning information. In some cultures, it is especially important to reach men also, because of the dominance of men in decisions concerning family size. Family planning messages can often be directed usefully toward community leaders, whose acceptance will tend to legitimize programs.

Vocational Education

The lack of adequate vocational education is a serious problem for a number of urban poverty groups. More economically secure and potentially mobile youths who have received some academic education must frequently be supported for long periods by relatives while they search for "suitable" employment. They would be better served by more relevant employment-related formal education. They could also profit from more structured prevocational training.

The less educated, more vulnerable residents of squatter settlements, who must seek any available marginal employment, need programs to upgrade their skills and to enable them to find more permanent and productive jobs. The most disadvantaged of the urban poor are easily discouraged by lengthy study schedules. Classroom situations have proven to be generally inappropriate for teaching the kinds of basic skills needed by these groups. On-the-job training and work/study schedules are more appropriate. Such programs can combine vocational training with literacy and other basic education. Successful programs tend to provide counseling and supportive services to maintain interest and participation.

One of the most frequent criticisms of vocational education is that it rarely reaches the poorest segments of the urban poor. Too often, it is oriented primarily to the modern sector. Too little training is provided for employment in small-scale manufacturing, commerce, and services.

At least three factors probably account for much of this bias. First, the higher wages available in the modern sector support a market for modern-sector training, even though that market is based partly on unrealistic expectations because of the limited number of jobs available in the modern sector. Second, much of the most effective training that is provided by enterprises for their own employees is provided by enterprises which are already relatively well-established, and they tend to be larger-scale modern enterprises. Third, the kinds of training needed for smaller-scale enterprises, including those in the informal sectors, still are not well defined.

Past experience with training suggests that purely governmental programs oriented to small-scale entrepreneurs and workers are likely to be effective in only a few cases. At the same time, however, it is unlikely that larger-scale enterprises who do not conduct successful training for their own workers will be interested in providing training for others outside their enterprises, unless they have some special incentive for doing so.

The possibility of attacking this problem on at least three fronts should be explored: (1) governmental training through consortia of small enterprises formed specifically for training or through existing cooperatives, so that potential employers have a role in shaping the training programs; (2) governmental training in which the services of skilled staff from existing larger enterprises are used to help achieve appropriate content and quality in training—those services could be paid for by hiring individuals to give evening and weekend classes outside their responsibilities to the firms they work for or by paying their firms a fee for their services; and (3) paying larger-scale enterprises that already have their own training programs to provide training for small enterprises which are potential (or even existing) subcontractors to the larger firms. Vocational training projects are likely to be of value for existing and potential employees in all of the types of poverty groups identified in Chapter 3, including those households that regard their present residential locations as only temporary.

Literacy Programs

Literacy programs have been developed in a number of countries to supplement the efforts of formal schooling systems. The traditional definition of literacy has been amended somewhat to permit the use of new approaches. Traditional literacy (essential skills in reading, writing, and arithmetic) has been replaced with the concepts of functional literacy (reading and writing skills necessary to function within a person's culture) and work-oriented literacy (necessary skills for acquiring basic work-related information).

Wide-ranging literacy is clearly essential for effective social change of many kinds. However, individual motivation is necessary for the success of social programs. Wide participation and continuance in literacy programs can best be assured when individual motivation is recognized. A number of work-oriented literacy programs have met with failure because they have not recognized this.

The urbanization process provides a useful opportunity for literacy programs. New in-migrants are often more highly motivated for learning, and literacy programs can be useful elements of vocational training or training designed to orient new households to the urban area. Classes can be located in factories and other job sites, as well as in community and religious buildings. Some significant attempts have also used radio, television, newspapers, and other media—both to promote literacy classes and as a medium of instruction.

Education in Civic Participation

Education in civic participation can include a wide range of types of nonformal education designed to bring the urban poor directly into productive community participation. Individuals can be educated to participate in the political process. They can be provided with information on community programs.

In staging areas, newly established households can be provided with civic information, along with information on basic health care and employment opportunities. More permanent and mobile urban residents need information on a wide range of possible community improvement opportunities. Education can be provided in cooperative techniques, self-help housing construction, family budgeting, and the use of financial institutions, consumer information, public safety information, and other necessary information for urban life.

There are many media available for community education. These include household visits, community and religious meetings, advertisements in public places, and the mass media.

A program for the dissemination of information relevant for households in newly forming low-income settlements was proposed in Pakistan in 1975 by the national television system in conjunction with the first metroville (basic urban settlement) project in Karachi.[6] Televised literacy courses were to be offered for adults, together with programs dealing with such subjects as employment opportunities, public health services, personal hygiene, communal hygiene and sanitation, precautions against infectious diseases, procedures for acquiring residential plots, and house construction.

Projects in education in civic participation can be useful for most potential target groups, but their effectiveness will depend

partly upon the territorial orientation of households. They are likely to be most effective for those that are consolidating and less so for those that are in transit or externally oriented. Their content should be tailored as fully as possible to the needs of specific groups—with individual programs for those that have no property rights and those that are tenants or owners, individual programs for those that have access to formal credit mechanisms and those that do not, and so on. The feasibility of finely differentiated programs will depend, of course, on the resources available in individual cases.

INSTITUTIONAL ASPECTS

Limited financing often makes it difficult to provide staff in sufficient quality to meet real needs. Nonformal education programs that seek to create richer learning opportunities in addition to those available in existing graded educational systems are frequently fragmented and administered by a variety of agencies and organizations without proper coordination.

In order to deal with the dilemma posed by these problems, the following institutional changes should be considered: administrative reform, changes in education financing, a higher priority for upgrading programs and services relative to expenditures on physical facilities, and greater community participation.

Administrative Reforms

There are a number of possibilities for changes in the structure of educational systems. The length and number of cycles in the formal educational system can be varied to serve different needs for schooling. For example, secondary education can be divided into two cycles, the first of which would assure at least minimal vocational learning for students not continuing to higher levels.

Even some countries spending large percentages of their public budgets on education have less than satisfactory results. In Peru, for example, teachers have traditionally had a disproportionate amount of political power to support wage demands. Because education still represents the best hope for escape from poverty of the majority of the population, there is little popular support for reducing educational expenditures in spite of a history of poor performance and strikes by teachers. One of the changes that may be needed in such cases is administrative reform designed to decentralize the control of educational systems and increase the power of parents and local communi-

ties. At the same time, there must be an effort to help teachers become active agents in a reformed educational process.

Changes in Financing Education

The financing of education is of major importance in relation to equity. As noted earlier, subsidies often are used to benefit upper- and middle-class urban groups rather than to increase the participation of less privileged groups. In countries where secondary and university educations are subsidized, the regressive impact of education is accentuated.

The argument for subsidizing education is twofold. First, education produces certain external gains for society that are beyond private gains. Second, education can be used as an instrument to achieve a better distribution of future income. The first of these arguments has some merit, but private returns from some types of education in developing countries (in the form of future income) are very great and far from being equitably distributed.

Because the private gains from secondary and university education often are high and because they tend to accrue to higher-income groups, there is some basis for increasing the fees paid by middle- and upper-income recipients of such educational benefits, thus making more resources available for wider coverage in basic educational services.

Program and Service Emphasis

Education in the developing countries is frequently perceived in terms of physical facilities. Consequently, the needs of low-income groups for even the most minimal educational services are often postponed until funds are available and budgeted to construct such facilities.

Educational planners, operating with extremely limited resources, should reevaluate the role of standard physical facilities in education. While the construction of conventional schools may be a legitimate long-term goal, many educational needs of low-income people can be met through effective staffing and programming in rented or temporary facilities.

The limited resources normally available often will be most effective if focused on program and staffing quality rather than physical facilities.

Closer links between formal, nonformal, and informal educationa programs and services should be developed. The use of

nonformal and informal delivery systems at all levels—preschool through lower and upper secondary levels—may prove very cost effective. There often will be opportunities also for a greater utilization of nonprofessional educators, such as the military, business leadership, and the educated unemployed.

Fuller utilization and involvement of community leadership, as well as members of low-income communities, should be considered to provide assistance in teaching such things as job skills, health practices, and household finance and budgeting. Increased participation by relevant members of the community can greatly increase the acceptance of programs and expand the potential impact of the limited resources available.

COMPLEMENTARY ACTIONS THAT MAY BE NECESSARY

National and local educational programs will require the properly scheduled provision of essential infrastructure, such as power, water supply, sanitation, and transportation. Greater coordination will be required between the scheduling of work and education to facilitate education for adults and children who must work to support their families. Points of intervention and intervention strategies should be flexible and adapted to local situations. Factories, shops, schools, markets, and so forth might provide suitable locations for such programs. Much of the instruction provided may have to be outside the normal hours of work.

National and local job analysis and job definition should be undertaken in both the public and private sectors to redefine legitimate roles for the urban poor with limited skills and education. Apart from providing new employment opportunities for low-income people, such programs would free skilled workers and professionals to concentrate on those functions appropriate to their levels of training and education.

Economic assistance, both direct and indirect, should be given to school supply industries at all levels. Particular emphasis might be given to development of small-scale cottage industries run by low-income residents.

Health and nutrition programs should be integrated into educational projects to facilitate full participation and maximum educational benefit for the target population. Major contributions to standard educational programs might be made through school breakfast and lunch programs and health examinations, as well as through the increased education of parents in the matters of diet, food handling, and rudimentary home economics. An unquantified but often large part of investment, particularly in primary education, is wasted because many children are so undernourished and persistently weakened by

dysentery and other illnesses that they simply cannot concentrate on, or benefit fully from, the services provided.

Appropriate sites should be provided throughout low-income communities for basic education facilities, as well as for future expansion and upgrading. Particular emphasis should be placed on community participation in the site selection process and in site clearance and the relocation of families, should this be required. Special or supplemented transportation services might be needed to provide low-income groups with effective and efficient access to educational programs and facilities. Adequate services should be available for all age groups and for the fullest possible spectrum of educational programs, formal and informal.

OTHER LIKELY IMPACTS

Formal and informal educational projects for the urban poor will have impacts that extend well beyond the urban poverty groups for whom they are designed.

Potential Benefits

Effective educational projects can result in a more efficient utilization and maintenance of urban services, thereby contributing to the achievement of low unit costs for such services. Improved health, child care, and family planning are likely to result from high-impact educational projects. Furthermore, increases in the levels of health and welfare of low-income groups can significantly reduce health hazards for other members of the urban population.

Employment made possible by the achievement of at least minimum levels of skills and education is likely to result in increased profits for middle- and upper-income entrepreneurs as a result of increased consumption. Widespread increases in the use of labor-intensive technologies, which may result from an upgrading of the skills of the low-income labor force, may significantly reduce national balance-of-payments problems.

The participation of low-income groups in decision making can be markedly enhanced by properly designed informal education of the types suggested, by literacy programs, and by vocational training, as well as by programs concerned explicitly with civic participation.

Potential Negative Effects

A focusing of educational resources on the urban poor will require a relative diminution of efforts aimed at other groups and conventional programs; this may, among other things, generate negative reactions from middle- and upper-income groups. Increases in the general levels of education and skills of the urban poor and greater participation in urban decision-making processes may be objected to by those groups who have normally controlled such processes. While the overall results of a realignment of power may be considered beneficial in the long run, immediate reactions by some segments of a community may be very negative.

NOTES

1. International Bank for Reconstruction and Development, Education Sector Working Paper (Washington, D.C.: IBRD, 1975), p. 13.

2. Ibid., p. 30.

3. International Labour Organisation, Matching Employment Opportunities and Expectations: A Program of Action for Ceylon (Geneva: Imprimeries Populaires, 1972), pp. 113-17.

4. International Labour Organisation, Employment Incomes and Equity: A Strategy for Increasing Productive Employment in Kenya (Geneva: Imprimeries Populaires, 1972), pp. 233-52.

5. International Bank for Reconstruction and Development, op. cit., p. 33.

6. Karachi Development Authority, Master Plan Department, Karachi Development Plan, 1974-1985 (Karachi, Pakistan: Karachi Development Authority, 1974).

9

PROJECTS IN HOUSING

ROLE OF HOUSING

In addition to its obvious importance as shelter, housing fulfills important social, educational, and economic functions. It provides a physical base for family activities and a personal territory from which the family can gradually extend its involvement in urban affairs, particularly in the case of recent in-migrants to the city. Often, it is also a vital expression of social status.

Experience in both developing and developed areas indicates how important it is to consider not only the physical house in housing projects but also the entire household environment, including the location of housing areas relative to job opportunities, the availability of water and sanitation, the transportation services available, the health and educational services available within each residential area, and a variety of other services and facilities to which households should have access. Invariably, therefore, analyses of housing projects must be intersectoral if they are to be sound.

If a major aim is to help fulfill the needs of households (rather than to merely build housing), it will usually be essential to consider alternative approaches to housing. If the overwhelming needs of low-income families in a particular area are employment, safe drinking water, at least minimal sanitation, and access to adequate health and educational services, then an appropriate housing program may involve no physical house structure at all but focus instead on the provision of well-serviced plots in locations close to job opportunities and accessible to health and educational centers. Too often in the past, households' real needs have been neglected because of a mistaken assumption that houses are the most important part of any housing program.

Clearly, housing programs affect the interests of many other groups in addition to the households they immediately serve. The process of housing construction and finance has many important economic and social effects. The housing sector has many backward linkages that make it important to the rest of the economy. In many developing countries, industries that supply construction materials depend on housing demand to reach economic scales of operation. A large part of the construction industry, which is a key contributor to capital formation in all sectors, is often maintained by the requirements for housing. Residential construction technologies in the developing areas are usually relatively labor intensive, and the housing sector is a major generator of employment, including the unskilled and semiskilled employment that is so important for the urban poor.

Housing investment and related institution-building activities can also have important implications for a country's savings and investment potential. Housing can provide an incentive for attracting otherwise unavailable savings to financial intermediary institutions. The resulting institutionalized liquidity can facilitate the provision of long- and short-term credit and reasonable terms for house construction and purchase, with important implications for future as well as present growth.

Conventional home-building and financing techniques have enabled large percentages of middle-income families, particularly those in Latin America, to finance their own housing without making demands on scarce governmental resources. It would not be realistic to suppose that governments will address the needs of the poorest citizens if the needs of higher-income, more influential households are not met. Conventional housing projects can also be extremely important generators of employment. Nevertheless, it is now widely understood that conventional techniques are not sufficient to meet the overwhelming shelter needs of the urban poor.

POLICY IMPLICATIONS

Need to Preserve Existing Stock

Many governments have begun costly subsidy programs, often involving slum clearance and relocation from existing squatter areas. These programs usually fail to have a significant positive impact relative to the magnitude of the problem. On the contrary, their principal effect is to reduce an already insufficient housing stock. Subsidy resources are limited; other important development priorities compete for public funding. The number of beneficiaries as a percent-

age of the total number of poor urban households tends to be low. Often, relocation housing does not even benefit the squatters being removed; instead, the beneficiaries turn out to be middle-income or lower-middle-income families. The result can be a net decrease of the housing stock and an exacerbation of urban problems. Subsidized housing projects and pronouncements of major construction program goals by governments may even dissuade poor families from investing in their own housing

Public housing programs often are most effective when developed, phased, and coordinated as part of a comprehensive program that is directed at a household's basic housing needs, with both public and private resources allocated appropriately to each problem area.

In many cases, it will be desirable to emphasize the use of public funds, not only to increase the stock of housing available to low-income groups, who have little or no chance of obtaining adequate housing by other means, but also to stimulate and focus other housing resources (private, self-help, and so forth) on specific urban areas and target groups in order to maximize the total impact of the resources available.

In most cases, it will be important for public housing programs to be directed toward increasing the total housing stock, emphasizing projects and programs that minimize the dislocation and relocation of existing households.

Existing squatter settlements, however poor their standards, provide shelter at rents that can be afforded. They act as reception centers for new unskilled migrants. They provide a wide variety of employment in commerce and cottage industries, and they often provide shelter close to concentrations of employment. The proximity of squatter areas to sources of employment is especially important for the urban poor, who can least afford the costs of public transportation from outlying areas. Squatter settlements provide residents with essential social support when they are unemployed and at other times of crisis. Finally, they often encourage and reward small-scale private investment in housing.

Improved Technology

Improved housing technology is often regarded as the key to solving the housing problem. Experience has shown, however, that simple solutions to the housing problems of the urban poor are unlikely to be found in more elaborate design and engineering. The real benefits of such improvements in technology will flow to people farther up the income scale.

Policies aimed at low-income communities might best be aimed at upgrading the technical skills of the target population and a more effective use of existing traditional local materials to upgrade housing conditions.

Role of the Private Sector

Some conventional thinking holds that only the public sector will build low-income housing. Among other things, this view overlooks the fact that the informal private sector already is serving the lower income submarkets; in many urban areas, it is generating at least 50 percent of the total supply. Most governments have neither the resources nor the administrative capacity for such a massive undertaking. In a majority of countries, the private sector, formal and informal, will have to continue to shoulder the greater share of the task.

The legal, financial, and physical environment should stimulate the constructive participation of the private sector and, at the same time, protect low-income households from exploitation. As part of this effort, support should be provided for the small-scale part of the housing sector that is already contracting for low-income shelter—the small contractor building 20 houses a year and the small cooperative, for example—as well as larger contracting groups.

PROJECTS WITH A POTENTIALLY HIGH IMPACT ON THE URBAN POOR

Projects Providing Basic Services and Facilities in Staging Areas

The low-income residents of staging areas are often young, single, and recently arrived in urban areas. In some instances, they may be individuals or households at various stages of economic and social stagnation, who need an injection of public support to help them regain confidence and hope, so they can move on to locations more appropriate for permanent residence. In any case, they are likely to control few capital assets; they are likely to be tenants or to have no secure tenure. Frequently, they are or can be oriented to other areas within the urban area—sometimes, outside the urban center itself. Their current levels of consumption are low; they usually suffer from basic service deficiencies.

Projects directed at members of this group should provide the minimal services essential to survival in the urban setting, while

building up a foundation for future improvements in consumption. The aim should be to invest as little as possible in the physical territory involved and as much as possible in people—to help them help themselves toward social mobility.

Project components are likely to include the upgrading of water and sanitation facilities in staging areas and the provision of essential support services. Residents of such areas are frequently in need of assistance in orienting (or reorienting) themselves to the urban environment. This assistance may include employment information services, adult literacy and vocational training, basic health and nutrition services, community organization, and legal assistance.

Such projects sometimes take the form of transit camps, in which households or individuals are supposed to stay in the locality for a relatively short time before moving on to a suitable permanent location. Such camps are to be found in Bombay, for example, where they have been built to house families temporarily, pending rehabilitation or clearance and the reconstruction of existing slums.

The principle of such projects is sound. In practice, however, areas intended for temporary support can easily become permanent. This is sometimes because they are too convenient to major job opportunities, because the facilities and services they provide are too attractive relative to other opportunities, because the promised permanent locations are not developed quickly enough, or simply because no rent is charged and services are free. To avoid this distortion of their purposes, they should be far enough from job opportunities to induce households to move as soon as they can. The standards of facilities and services should be kept purposely low enough to permit survival and takeoff but not sufficient to compete with those available in locations that are more appropriate for permanent settlement. Alternatively, staging areas can be administered firmly, so that households are forced to move out when an acceptable alternative is available, or charges can be levied for space and services to encourage shifting—but these measures are usually difficult to sustain.

As the name implies, projects of this type are appropriate for two of the types of poverty groups identified in Chapter 3: those that are externally oriented and those that are in transit.

Slum-Upgrading Projects

Slum-upgrading projects are being considered increasingly as an alternative to relocation and replacement. Relatively secure locally oriented squatters who have basic service deficiencies can be provided with community water and sanitation. Environmental and

general services deficits can be improved in a number of ways. Land tenure can be legalized and loans provided to encourage home improvements. Incentives can also be given to landlords to improve existing rental shelter. Roads, parks, and community facilities can be improved and/or augmented. Health and educational services of the type discussed in earlier chapters can be improved. Information about job opportunities can be provided. Credit can be made available. Technical assistance programs can be established to help small-scale entrepreneurs.

All of these project elements should be designed to take advantage of the social and organizational base that typically exists in an established slum. That base should be used as a foundation for mobilizing the capacities of slum dwellers to help them help themselves. They are likely to already have developed informal mechanisms for helping one another to survive, even without any public assistance. They should be encouraged to take the lead in deciding what can be done with whatever public assistance can be made available.

The physical elements of a squatter-upgrading project should prevent, as much as possible, a decrease in the housing stock and should emphasize the upgrading of existing shelter. Some housing may have to be removed to provide for roads, infrastructure, and community facilities; the most substandard units may have to be replaced. Care should be taken to minimize such removal. This is important because existing slum areas are usually already near sources of employment, which may not be available in potential relocation areas. If removal is inevitable, however, slum upgrading can often be carried out together with new low-income settlement projects, so that spillover plots can be provided for relocated squatters.

During the early stages of slum upgrading, several basic parameters must be established. These include: (1) minimum acceptable standards for the housing that is to be preserved; (2) standards for new plot sizes and project infrastructure (roads, storm drainage, street lighting, electric supply, refuse collection, water supply, and sanitation); (3) standards for public facilities (schools, health and family planning services, recreation facilities, and markets); (4) forms of tenure; and (5) the financing mechanisms and terms to be used.

Fundamental to the success of a slum improvement program is the need to understand the social and economic characteristics of the residents of the area. Surveys of household and housing characteristics should be conducted to enable planning of neighborhood physical standards and to fit proposed programs to the economic and social realities of the individuals concerned. It is very desirable for the target households to play a major role in establishing project priorities.

Major slum-upgrading work is being undertaken presently in several countries, including Indonesia, through the kampung improvement program, with a first project in Jakarta, and Karachi, where the improvement of a central city area with a slum population of approximately 500,000 was initiated in the mid-1970s with World Bank support. Projects of this type are capable of reaching well down the income scale and are relevant for existing low-income urban groups of the types discussed in Chapter 3, except those that are externally oriented or in transit.

New Low-Income Settlement

In response to the need for new low-income settlement, projects that combine support for housing with a variety of other services and facilities are being recognized increasingly as promising means of response. The importance of combining other project elements with support for housing has been recognized, in particular, because of massive failures in projects that have focused exclusively on the housing component.

The components that now seem to be particularly important are the generation of new employment, together with support for existing employment (including the combined use of residential space for retailing, manufacturing, and other purposes); preventive health services; programs in functional literacy, elementary education, and technical training; water supply and sanitation; effective low-cost transportation; the securing of property rights for households; access to credit; and technical assistance for small-scale enterprises and house building. The upgrading of basic urban services, outside as well as inside a project area, frequently will be necessary for the sustained success of such projects.

It is likely to be desirable to provide for a wide variety of shelter standards, ranging from open plots with communal water and sanitation, to utility wall plots, to fully serviced plots for individual houses and relatively low-cost flats or apartments.

Although all of the services and other project components suggested above may be desirable, it will not always be possible to include all of them in an individual project. The elements that are most important will depend on local needs and capacities and the political support that can be generated, including policy support for low-income settlement at the national governmental level.

Projects focused on the provision of land, water supply, and sanitation in the past have been called sites and services projects. The term sites and services should probably be discarded, since its

focus on land and services gives it a more narrow connotation than is desirable.

In spite of the difficulties associated with relatively complex projects of the type suggested (in particular, the interagency and intergovernmental management and organizational difficulties involved), they hold out great promise for improving the condition of the urban poor, provided that the standards established in them are realistically low and provided they are administered properly, with maximum participation from the poor themselves. Indeed, they may be a necessary minimal type of action for the urban poverty confronting the developing world. More fragmented projects are likely to fail even more dramatically than they have in the past, as the wave of urban growth and inmigration swells. Projects of the type suggested can reach a wide variety of poverty groups, ranging from those that are relatively mobile and suffering from basic services deficiencies to the more mobile and prosperous of the urban poor, who primarily seek improved environments and tenure.

One of the most comprehensive low-income programs proposed so far to deal with the problem of urban expansion and the urban poor is in Karachi.[1] The population of the metropolitan region there in 1973 was approximately 4 million. During the 1960s, it was growing at 6 percent per annum. It is expected to reach approximately 7 million by 1985. At least one-quarter of that population is struggling to survive in densely populated squatter areas and overcrowded central slums.

The 1974-85 development plan for Karachi metropolitan region proposed the twin policies of slum improvement and metroville development. (Metroville is the term given to the integrated development of urban land for new low-income settlement.) Each metroville project will be designed to accommodate a population of the order of 50,000 persons in housing, ranging from open plot development to higher-standard dwellings. It is estimated that Karachi will need at least four such projects each year to keep abreast of urban growth during the next ten years. The long-range objective of the metroville program is to provide economically integrated low-income settlement with employment opportunities, water supply, sanitation, health services, educational services, housing, power, transportation, communications, recreation facilities, religious and cultural facilities, and other essential urban services.

In the first project, about 40 percent of the job opportunities needed were proposed to be within the project area, which is also close to major industrial and commercial employment concentrations. New low-income housing finance and building techniques are to be developed to support the program. Stabilization ponds are to be used for sewage treatment wherever possible to keep both capital and

operating costs low. The effluent is to be used for intensive agriculture where soil and other local conditions permit. Together with innovations in the use of mass media, there are to be innovations in urban management and finance, including substantial involvement of residents in area management and maintenance. Mass media, including the services of national television, are to be used to support activities in several sectors, as well as to publicize the program itself.

Three basic types of shelter have been proposed. First, small open plots of 70 to 120 square yards with minimal on-site infrastructure (community water taps, storm water drainage, and sewerage) will be offered. Self-help home construction will be encouraged. Second, similar-sized plots will be offered with individual water connections, additional utilities, and a utility wall with basic fittings. Finally, a small proportion of multifamily and single-family standard units will be offered.

A number of local and national institutions will be encouraged to participate in the metroville program. These include institutions dealing with housing finance, small industries development, public works, education, health, welfare, labor affairs, social security, and mass communications.

The house plot prices proposed for metrovilles ranged from PRs12 (about U.S.$1.22) per square yard for an 80 square yard open plot to PRs36 (U.S.$3.67) per square yard for a 240 or 400 square yard bungalow plot. The prices of commercial plots are, of course, higher. The renting of space by owner-households to others is to be provided for, and there is also provision for commercializing parts of residential spaces in selected locations, subject to the payment of an extra plot fee. The program will be largely self-financed.

Multioccupancy Structures

In a few specific cases, projects that place a primary emphasis on publicly provided communal structures can be justified. Successful cases of large-scale programs involving multifamily structures appear to be limited to more advanced developing countries, which have especially high population densities near sources of employment, relatively productive and educated low-income households, low construction costs, and substantial administrative capacities. The most successful cases—for example, Singapore and Hong Kong—have tailored housing standards to meet limited individual and public budgets. Housing densities had to be high to reflect the rental and repayment capacities of low-income households. The high densities also required high levels of expertise in housing management.

In some cases, communal structures may be appropriate as dormitories for single workers. Such high-density dwellings may be especially feasible near industrial estates employing large numbers of young semiskilled workers. But even for these rather special-purpose units, the question of whether they can be provided most effectively by the public or private sector should be evaluated carefully. In Karachi, for example, deras (dormitories) are provided for single male migrants through the private sector. They fulfill an important social need, but it is likely to be more effective to provide land and supporting infrastructure for them, as for normal family housing, rather than attempt to construct such facilities publicly.[2]

The conditions required for successful public housing programs are not present in most developing countries. Low income levels preclude conventional construction or high-rise solutions from being universally applicable without large subsidies. Limited capacities for housing management and the collection of payments are also serious constraints.

INSTITUTIONAL ASPECTS

Many existing housing institutions are not organized to deal effectively with massive new undertakings to provide or support low-income shelter. Housing functions often are divided among a multiplicity of entities, including national, state, and local governmental agencies; special public entities providing housing for civil servants; and a variety of private entities. Existing institutions often have dealt primarily with small-scale, middle-income projects. Experienced personnel are limited. The nature and scope of the new institutions required may represent an abrupt departure from the past. The functions of existing housing institutions should be studied and rationalized where necessary. If upgrading and minimum housing schemes have not previously been implemented, substantial administrative reform is likely to be necessary.

Housing Finance

Virtually all of the urban poor are currently financing their own housing, however substandard, in some way. Housing is built and improved in stages as funds are mobilized. Some individuals borrow from friends, relatives, or employers. Some sell other property to finance housing. Some home owners receive down payments or key money deposits from tenants. In some cases, housing societies receive monthly or quarterly quotas from members who subsequently

are able to take out loans from the societies. Many families must borrow at high rates of interest from informal sector moneylenders. In any case, when financing is available, it tends to be limited, costly, and available for short-term periods only.

Institutionalized long-term housing finance is still a relatively new concept in most developing countries. Since the early 1960s, however, significant progress has been made in the establishment of savings and loan operations. By 1973, U.S.$1,391 million had been loaned through such institutions in Latin America to finance 240,000 homes.[3] This achievement has been overshadowed by a much larger mushrooming of squatter households in Latin American urban areas in the same period. Indeed, most of the beneficiaries of the new housing finance systems have been middle-class families. The urban poor still receive little benefit from institutionalized housing financing.

Efforts have been made to lower the targets of housing finance programs to reach lower-income households. The following are the principal stumbling blocks encountered.

Need for Guarantees

Most developing country savings and loan systems have mortgage guarantee mechanisms, which require borrowers to have a high degree of solvency in order to keep institutional risks low. This obviously is incompatible with the needs of poorly capitalized low-income households.

Administrative Costs and Management

The processing of a large number of small loans is relatively expensive. Institutions prefer the lower administrative costs of large loans. The management of housing finance institutions usually is middle-class and naturally conservative. There often is little or no concern to simplify loan requirements to benefit lower-income households.

Capital Shortages and Mortgageable Tenure

The capital available for housing finance tends to be extremely limited. There is tremendous competition with more profitable and shorter-term investments. Institutions tend to ration loans to the lowest-risk customers. Mortgage institutions are largely dependent for their capital on the savings of middle-class groups, who expect a majority of the housing loans in return. The savings of lower-income urban households are limited and are more difficult to institutionalize.

Because of the complex laws and regulations governing land tenure, it is difficult for poor families to obtain mortgageable tenure

to their land at reasonable cost. They often can offer no conventional guarantee for housing loans.

Housing Standards

Housing finance institutions prefer to lend for conventional housing, which they feel is desirable collateral. Sites and services and other minimal housing solutions often are not considered to constitute adequate security.

For all the reasons listed above, there have been few examples of extending formal housing finance to the poor majority in urban populations. When such finance is made available to lower-income households, programs usually must include complementary elements that reduce the risks outlined above.

A relatively new method of mobilizing large amounts of capital for investment in housing at all or most income levels is to establish a nationwide forced savings program. This typically involves a levy on all salaries and wages. The funds thus mobilized yield interest to the involuntary contributor and are (or should be) protected against inflation. In Brazil, which has one of the most highly developed forced savings systems, over U.S.$1 billion was being assembled annually by this means in the late 1960s. The maintenance of such a program for financing basic urban settlement clearly requires policy support at the national level. Although the forced savings system of Brazil has been very successful, several words of caution are in order. Contributions to such funds are a form of tax, and this may make the introduction of this type of system very difficult. If it is introduced, it may be inflationary for at least two reasons. First, it may generate funds for housing that far exceed the physical capacity of the housing industry. Second, employers making contributions in behalf of their workers may pass the tax on in the form of increased prices for their products. The success of a forced savings system depends on very competent management; with ample funds, it may become tempting to pay high prices for land and construction in order to keep the funds mobilized. It is also tempting to make loans at lower than market interest rates, ostensibly to fulfill the social objectives of housing programs; in a number of cases, this has led to severe decapitalization.

Participant Mobilization

The goals of most minimum shelter programs cannot be met without the mobilization of the target households themselves in initial project implementation and in the maintenance of infrastructure and community facilities.

Numerous examples of self-help housing programs can be cited. They vary from partial self-help projects, where participants provide only some of the building materials and unskilled labor needed, to complete self-help projects, where participants work together to construct houses and community infrastructure.

Several guidelines have been elaborated for the formulation of self-help housing projects.[4] These include the selection of eligible families who have a sincere interest in, and capacity for, self-help and the education of these families in self-help techniques. Work can be carried out in groups, or each family can construct its own house. In both cases, a foreman can be provided to supervise the work and train participants. It may be desirable to establish a mutual savings association to finance materials, land, and administrative costs.

Aided self-help has resulted in the construction of large numbers of units at costs significantly lower than those of contractor-built housing. However, flexibility and sensitivity to local conditions are essential. In some cases, complicated administrative and technical procedures have been imposed on projects from the outside without regard for existing indigenous capacities for progressive development.

Self-help programs may be most successful where they rely primarily on indigenous organization and individual self-improvement. Experience in Peru and other countries has shown that where a minimum of credit is provided with security of tenure, self-help can be spontaneous and effective on a large scale.[5]

The process of squatting and shanty construction itself, like small-scale commerce and industry, is one of the more dynamic activities of the informal sector and a primary source of employment. The fact that squatters have consistently built their own homes, frequently against substantial legal and financial obstacles, attests to their often overlooked initiative. One of the challenges facing housing planners is to encourage this initiative and to channel the energies and savings of subsistence urban dwellers into the most productive efforts possible.

COMPLEMENTARY ACTIONS THAT MAY BE NECESSARY

As in so many other sectors, perhaps the most important complementary actions to be taken are the creation of jobs and the achievement of higher productivity to raise the incomes of the poor so that they can afford better housing. The housing sector itself provides many opportunities for both job creation and increases in productivity through the informal education and training of unskilled laborers in construction skills.

Land Management

The problem of finding reasonably priced land for the urban poor is acute. Annual rates of increase in land values that range from 10 to 40 percent are common. The doubling of land prices in a year is not unknown. Land speculation causes aberrations throughout the urban development process. Its harshest effect is to shut out low-income families from land ownership. Because of ownership traditions often inherited from colonial eras, many governments have been slow to react to this reality. Outside of the People's Republic of China and Tanzania, there are few cases of direct nationalization and redistribution of urban land.

There have been varied attempts to limit the effects of land speculation and lower the price of land to the urban poor through land taxation measures. Land value increment taxes and betterment taxes have been used in several countries to capture for society the value of increases due to speculation pressures and public investment. Taxes are also imposed on idle land to penalize the withholding of urbanized land from productive use. It is difficult to assess the redistributive effects of such taxes. As revenue-raising measures, they tax wealthy landowners progressively; they also tend to reduce the cost of urban land somewhat. Land taxation is, however, still a weak component of the fiscal systems of many countries. There remains ample scope to use such taxation more effectively, as a revenue-raising device, as a means of curbing speculation and encouraging more efficient land use, and as a means of capturing for the public sector part of the capital gains that result from public investment. This will be discussed more fully in Chapter 11.

In some cases, speculation can be controlled by buying large amounts of peripheral land at low cost and scheduling its development strategically in relation to demand. This technique is referred to frequently as land banking. There are many examples of such schemes, some involving the joint participation of the public and private sectors. Their degrees of success have been very uneven. Sweden has one of the most highly developed systems, but its success there depends on a variety of supporting measures and very sound administration. The magnitude of the management tasks may make large-scale land banking inappropriate for many developing areas in the near future.

Because of fiscal and political pressures, public land management and land-banking schemes are sometimes used to generate public revenues or for purposes other than to benefit the poor. In Korea, for example, land readjustment programs provide for the government to urbanize private land in return for a share of that land, the remainder of which can be sold subsequently for new private use. At present, confiscated land is sold at auction to the highest bidder. This tends to price out low-income households.

Residents of low-income settlements usually need some reasonable guarantee of tenure as an incentive for investment, although this varies with tradition and culture. Land registration should be inexpensive and administratively simple. In some cases, there will be a need to simplify existing procedures drastically. In other cases, legal assistance to low-income households, the publicizing of proper purchasing procedures and instruments, and increased access to credit for housing will strengthen the bargaining positions of low-income groups sufficiently to enable them to participate effectively in existing market systems.

Water Supply and Sanitation

As noted in Chapter 6, water supply and sanitation systems frequently can be used to induce more efficient and more equitable land-use patterns. Such projects, in new areas or as extensions of existing water and sewerage facilities for squatter-upgrading projects, often can provide the impetus needed for further development and action by low-income residents.

Improvements in Construction Materials

Housing construction materials represent about 65 percent of total construction costs in developing countries. This is considerably higher than in developed countries. A variety of measures can be considered to increase the quantity and quality of locally produced materials and to contribute to local employment, as well as to decrease dependence on imported materials. The acceptance of lower standards in minimum housing programs generally contributes to this end. Building material industries using labor-intensive techniques (for example, small-scale cement or stabilized block production) can be encouraged by such measures as technical assistance and credit and demonstration projects.

Transportation

The classes and types of transportation available to the urban poor can in great measure determine the viability and permanence of specific low-income residential areas.

The concurrent development of transportation to provide access to jobs and essential urban services, to facilitate the distribution of essential goods, and to facilitate the social interaction of low-income households will be important in conjunction with many projects intended

to develop new housing sites or upgrade existing squatter communities. Transportation projects can also increase the capital assets of the urban poor through the increases in property values they generate. They are dealt with more fully in Chapter 10.

Community Mobilization

Low-income settlement projects must have the understanding, confidence, and support of the households involved if they are to be implemented and sustained successfully. Community participation is important initially in decisions as to whether, where, and when housing projects should be undertaken. It is important in the establishment of priorities among project components and in determining the levels of improvement or new development that are feasible. Effective community organization is likely to be important for low-income households to establish adequate bargaining positions in their dealings with landowners, builders, financing entities, and the agencies responsible for public services. It is likely to be important also as a basis for mutual aid and self-help construction and maintenance.

The degree of outside assistance needed for such mobilization will vary greatly. Some established communities will be well organized, with clear leadership, before a project is initiated; others may have been well organized in the past to deal with specific issues but now lack clear structure. Many projects will be for groups of recent migrants, who are coming together for the first time.

The initiative of low-income households and their capacities for communal action, borne in the struggle for survival, are among the most valuable of all the resources available for the improvement of their condition.

OTHER LIKELY IMPACTS

Low-income urban housing projects are likely to have a considerable variety of impacts that extend beyond the groups for which they are designed.

Potential Benefits

Increased incomes for upper- and middle-income groups associated with the formal housing industry are likely to result from the penetration of lower-income markets in projects of the kinds proposed. Increases in the labor content of the production of construction materials should also contribute to a broader distribution of income.

The increased assets of low-income households made possible through the upgrading of housing and concurrent increases in the value of land can provide an additional source of long-term tax revenues for government (provided of course, that there is an effective property tax program). Low-income housing projects oriented to the particular needs of the urban poor can result in dramatic increases, not only in the supply of essential services but also in the capital assets controlled by the target populations. This is likely to increase both the social and economic stability of these communities and the urban areas in which they are located.

Low-income housing programs can have important implications for a country's capital and money markets. The institutionalization of capital flows that were previously outside the formal system can markedly affect the availability of credit and interest rates. Additional demands placed on the construction industry by the low-income housing sector can play an important role in upgrading skills in the sector. Improvements in the condition of the urban poor can result in reduced health hazards for the larger urban population, as noted in Chapter 7.

Potential Negative Effects

Large-scale housing programs can have important implications for a country's international payment and debt positions. The impact of alternative technologies and financing mechanisms on national debt should be considered carefully in project design. In most countries, low-income housing lends itself to an imaginative use of local materials and techniques, with very modest foreign exchange requirements.

A housing strategy focused on low-income groups may have other effects that might be considered negative. Three such possibilities are as follows: (1) since there are capacity constraints within the housing industry at any time, an increased emphasis on low-income housing may result in short-run reductions in the materials and labor available for middle- and upper-income groups; (2) in a similar manner, capacity constraints may require a reallocation of nonresidential construction resources—additional large-scale investments in housing can inflate construction prices generally if the industry is working near full capacity; and (3) increased commitments of resources to low-income housing clearly affect other sectors of the economy as well; reduced short-term overall growth might occur because of lower rates of return on investment in housing compared with investment in other sectors.

NOTES

1. Karachi Development Authority, Master Plan Department, Karachi Development Plan, 1974-1985 (Karachi, Pakistan: Karachi Development Authority, 1974).

2. T. Van Pinxteren and C. Van Pinxteren, "The Dera: A Housing Facility for the Male Migrant," mimeographed (Joint Research Project 4 for Urban Development and Slum Improvement) (Karachi: Karachi University, Government of Pakistan, n.d., ca. 1975; Amsterdam: Free University of Amsterdam, Government of the Netherlands, n.d., ca. 1975).

3. National League of Insured Savings Associations, "Selected Savings and Loan Statistics for Third Quarter 1973," mimeographed. (Washington, D.C.: NLISA, 1973).

4. United Nations, Manual of Self-Help Housing (New York: UN, 1964).

5. John F. C. Turner and Robert Fitcher, eds., Freedom to Build (New York: Macmillan, 1972), pp. 122-27.

10

PROJECTS IN TRANSPORTATION

ROLE OF TRANSPORTATION

Transportation is a major generator of employment and plays a vital role in the distribution of essential goods and services. Attention here is focused on projects that provide transportation for the urban poor directly.

The principal purposes of such projects are the following: (1) to provide jobs, (2) to provide access to jobs, (3) to facilitate the distribution of essential commodities used by the poor and help keep the prices of those commodities as low as possible, (4) to facilitate access to essential urban services, (5) to facilitate social interaction, (6) to increase the assets available to the poor in the transportation sector itself (in the form of vehicles or equipment), (7) to increase the assets of the poor through the impact of transportation on property values and on the productivity of equipment utilized by low-income entrepreneurs, and (8) to increase the supply of land suitable for settlement by the poor.

Unlike commodities, such as clothing and shelter, transportation is not regarded as a desirable consumption good in itself but as a necessary service to be kept at as low a level as possible. Except to the extent that movement provides employment, status, and/or aesthetic pleasure, it is a nuisance activity.*

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*The aesthetic pleasure of walking or bicycling should not be totally ignored; the journey to work of a householder working 12 hours a day for a pittance and traveling an hour to and from work may be one of the few forms of recreation he has. Nor whould the status associated with the ownership of even a modest vehicle, such as a bicycle, be overlooked.

Some negative impacts of transportation on low-income groups may partially offset the benefits enjoyed. Employment in traditional modes may be lost, for example, as public transportation is improved through the adoption of intermediate or modern technologies. Low-income housing, workshops, or retail outlets may have to be demolished to upgrade existing street systems, although demolition should be avoided wherever possible.

Land values in some areas may be increased by improved transport to the point at which low-income households can no longer stay in these areas. If they are landowners, they may benefit from the capital gains involved. More often, they will be squatters, who have been tolerated in the absence of alternative higher-yield uses, and increases in potential income from changed uses will result in their being forced out.

Improvements in the management of mass transportation may result in a more systematic levying of user charges, so that some low-income riders who previously traveled free will have to pay or find alternative modes of travel. Potential negative impacts of these and other kinds should also be built into project analysis.

POLICY IMPLICATIONS

The potential impact of transportation on the costs of essential commodities, the interdependence of transportation and land use, and the dependence of many developing countries on imported transport equipment suggest the potential importance of having policies in the following areas, which will support projects designed to benefit low-income groups.

If transportation projects intended to keep the distribution costs of essential commodities as low as possible are to be fully effective, it may be necessary to establish policies to ensure that transportation efficiencies are reflected in final prices to the consumer. For example, transportation pricing policies, the licensing of wholesaling and retailing for food distribution, and the provision of credit to the food distribution industry should encourage competitiveness in that industry. Food retailing usually is relatively competitive, but wholesaling often is concentrated in the hands of a few entrepreneurs.

Policies affecting the ownership and pricing of urban land should ensure that the additional potential land supply created by improvements in transportation becomes available to low-income groups. Policies that limit the size of individual urban land holdings and taxes based on market values to discourage speculation may be important parts of the policy package required. Incentives and regulations that affect the spatial distribution and density of land should also encourage

efficient land-use patterns, which keep the need for transportation as low as possible.

Because private automobiles and some other private vehicles are very inefficient users of public road space, it may be necessary to establish policies that restrict or tax heavily the importation, production, and use of such vehicles, particularly the private automobile.*

Existing import tariffs and other regulations in many countries often result in unnecessarily high prices and shortages of mass transit vehicles, equipment, and replacement parts. If there is an intent to improve mass transportation for the poor with a heavy dependence on imports to achieve this, import regulations should be made consistent with this objective.

If improvements in transportation are expected to increase land values and the productivity of capital equipment (for other groups as well as the poor), it may be possible to shape property tax systems, corporate taxes, and personal income taxes to bring into the public purse some of the capital gains thus generated. The feasibility of this will depend, of course, upon the priority ascribed to redistribution. Very often, increased revenues of this sort are invested in public facilities, which further widen the gap between the rich and poor.

PROJECTS WITH A POTENTIALLY HIGH IMPACT ON THE URBAN POOR

A great variety of technologies are used in urban transportation in developing countries, ranging from pedestrian pathways and bicycles through traditional modes, such as rickshas and animal-drawn carts, taxis, private automobiles, and high-capacity buses. Each of the public modes operates at different frequencies and fare levels; some are capable of functioning on quite different types of routes. They provide a multiple-choice service that could be tailored to the needs of all user groups, but deficiencies in public systems usually reduce the range of effective choice drastically. The lower-income groups are the people most adversely affected by these deficiencies.

On the positive side, the developing world's cities still have opportunities to achieve resource-efficient and varied transportation services, which most developed cities have long since lost or can recover now only at enormous expense. Levels of automobile ownership are low, and street systems often serve the residential, commer-

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*The term private here refers to vehicles not available for public transport.

cial, and other spaces of the city rather than dominate them. There is no need to repeat the mistakes of the developed world.

In taking advantage of these opportunities, it is extremely important to recognize the following: (1) the variety of types of low-income groups that exist and the variety of their transport needs; (2) the variety of existing forms of transport and the advantages of some simple, traditional modes in relation to local income levels and behavior patterns; (3) the desirability of keeping the need for movement as low as possible; and (4) the potential for organizing land use and transportation jointly to enable full exploitation of the simplest modes at the same time as more modern systems are being improved. The discussion of project types therefore begins with the simplest ones.

Improved Facilities and Support for Pedestrians

Even in larger cities with populations of several million, walk or walk-and-cycle trips may constitute as much as 40 percent of daily person work trips* and 60 or 70 percent of all daily person trips.[1]

Improvements in pedestrian movement benefit all low-income groups, including those at the lowest levels. These benefits can often be achieved very quickly at minimal capital cost.

In planning for the development of new low-income areas in such cities, it usually will be possible to arrange land use to keep many trip lengths short enough for walking. Careful thought should be given to provision for safe pedestrian movement. Movement paths should be identified. If these coincide with expected vehicle movement, provision must be made for adequate sidewalks. Traffic regulations that neglect the pedestrian (for example, free right or left turns) should be avoided as much as possible. In many cases, expected pedestrian movements can be served with relatively low-cost pedestrian paths, from which vehicular movement other than emergency and service access is to be excluded.

Local climatic conditions should be reflected in the detailed design of walkways, in building regulations that affect verandas or balconies, in the orientation of walkways to breezes, and so on. Pedestrians will be among the poorest and most debilitated of the poor, for whom the shortening of trip lengths and reasonable walking comfort

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*For example, in Karachi, in 1971, with a population of over 4 million, the estimates for walk and bicycle trips were 40 percent and 66 percent, respectively.

should be considered not just as matters of convenience but as factors affecting basic productivity.

Even in already built-up areas, it will often be possible to improve conditions for pedestrians considerably by changing traffic regulations, by improving sidewalks, by providing protective barriers between pedestrian and vehicular movements, and by preserving small streets as pedestrian ways.

In both new and existing areas, an important element of any program designed to support the pedestrian will be persistent on-the-spot education of both pedestrians and drivers and rigorous enforcement of traffic regulations.

The benefits of walking relative to other modes include the absence of capital costs for vehicles, absence of any foreign exchange requirements, and need for minimal infrastructure. It should be recognized, however, that operating costs per passenger mile, even with time and losses of earning potential excluded, are high, second only to a large automobile.[2] This emphasizes the importance of keeping trips short.

Recent examples of metropolitan planning in which an attempt is being made to exploit the potential of walking for low-income groups include the Karachi Development Plan, 1974-1985. Work on the implementation of that plan incorporated a close analysis of likely pedestrian movement and the preservation of existing walk-to-work routes in low-income settlement areas.[3]

Support for Bicycles

The bicycle is one of the most convenient and energy efficient forms of individual transportation available. It is an ideal mode for many short-distance journeys. Although it is already widely available, improvements can be achieved quickly at very low capital costs through changes in traffic regulations and cut in import and sales taxes.

Bicycle transportation keeps capital costs low for both the user and the government. Operating costs are lower than those for walking, although not as low as for buses. Its energy efficiency and the exercise it provides probably help users achieve relatively high productivity levels. The production and repairing of vehicles is relatively labor intensive.

The types of support for bicycle transportation that can be considered include assistance for the production and servicing of bicycles as parts of payment-in-kind packages for labor contributed for housing and other projects, provision of rights-of-way and facilities, establishment of traffic regulations to support bicycle use, and road user education.

Assistance for production and servicing might incorporate the following elements: technical training, provision of credit to manufacturers, public provision of work space, assistance in importing parts, and the establishment of sales tax levels that would help keep prices to the consumer low. In most cases, bicycle projects would make much more economic sense than the car assembly projects that have been politically popular symbols of modernity in a number of countries.

Where it is possible to establish payment-in-kind projects for the development of settlements by low-income groups themselves, bicycles would make a very useful part of the payment package. This would extend the concept of basic settlement facilities to include not only a plot with water supply, sanitation, power, access to education, and access to health services but, also, minimal personal transportation.

To encourage bicycle use, lightly surfaced paths can be built at low cost. In some cases, it may be economically sound to create lightly surfaced exclusive bicycle lanes adjacent to local streets, feeder roads, and arterials. This may also be a useful way to preserve future rights-of-way for bus or other larger-scale transportation when demands increase. In addition to rights-of-way, simple parking spaces and bicycle racks with police supervision can be provided in central city locations. Traffic regulations that protect the rights of the cyclist should be established and enforced. As with most other transportation improvements, cyclist, driver, and pedestrian education that includes on-the-spot penalties will be an important part of cycle-oriented projects.

The only potential serious disadvantage of bicycle use is the danger associated with it in heavy streams of mixed traffic. A variation on the basic bicycle is the moped, or minimotorbike. These are low in capital and operating costs, less of an interference to other traffic, and capable of moderate speeds, which makes them more convenient for longer distances than ordinary bicycles. Import duties sometimes put them out of reach of most low-income groups, however.

Facilities and Support for Traditional Modes

Traditional transportation modes for the poor bear a great variety of local names. They include animal-drawn carts for movement of goods, handcarts, animal-drawn vehicles for passengers (for example, the tongas and victorias of Karachi), bicycle rickshas, and autorickshas (which, fortunately, have supplanted man-drawn rickshas in most cities).

All of these provide adaptable forms of transportation at relatively low capital cost, particularly when public and private capital

costs are considered jointly. The production, maintenance, and repair of vehicles, as well as their operation, provide useful sources of relatively low-skilled employment. Like bicycles, they can serve widely dispersed destinations and are readily adaptable to changes in user routings. They, too, help extend the supply of accessible land for the poor at relatively low cost. Because of their adaptability, they also help keep risks for the user, owner-operators, and the agencies responsible for the provision and maintenance of roads relatively low.

Because the equipment and experience necessary for operating traditional modes are usually readily available locally, expansions in traditional systems usually can be achieved quickly.

The major potentially negative impact is their interference with mass transit vehicles. This can be ameliorated if fast and slow routes can be differentiated appropriately, but this is often difficult.

Animal-drawn carts and handcarts for movement of goods require low capital investments. Users often find the costs of haulage by these modes to be competitive with, or cheaper than, mechanized transport. This is particularly likely when long periods of waiting for loading or discharge at port, warehouse, or shop are involved. Their unit capacities make them especially relevant for small-scale merchants and industrialists. They can tolerate lower standards of road construction and maintenance than heavier vehicles, and they can penetrate narrow lanes in densely settled areas that are inaccessible to modern trucks.

Animal-drawn vehicles for movement of passengers provide low-income residents with transportation on both fixed routes and customized services. Like their goods-vehicle counterparts, they can tolerate rudimentary road surfaces and penetrate into densely settled areas.

Bicycle rickshas and autorickshas are capable of penetrating narrow, isolated passageways within high-density, low-income neighborhoods. They can thus provide sizable numbers of people with very convenient service. Larger autorickshas operating over fixed routes with frequent service can provide low-income neighborhoods with a service quality that is higher than that of city buses. The autoricksha is the only mechanized alternative open to people in many instances. It is expensive for low-income households compared with bus transport. The pollution and safety aspects of the vehicle are matters for concern, but both of these problems are solvable with proper vehicle inspection and police enforcement of existing standards. As driver wages increase, fares for autorickshas are likely to approach those of taxis. As this happens, and as low- and lower-middle-income households are better served by public transport, the market for autorickshas can be expected to decline.

To the extent that they can be provided without interfering excessively with essential forms of mass transportation, traditional modes should be encouraged rather than discouraged. For nonmotorized

traditional modes, the case for supporting them has become even stronger in the last several years, as fuel prices have risen.

The types of project support for traditional modes that may be worth considering include: (1) differentiation of services, with large mass transit vehicles excluded from small streets, which can be served best by smaller vehicles, as well as a relaxation of current restrictions on traditional modes in appropriate areas; (2) support for owners and operators of traditional modes in the form of credit and assistance in obtaining parts for maintenance, including support for the development of cooperatives for equipment purchases, operation, and maintenance; and (3) careful structuring of taxes and licensing fees to avoid discouraging traditional modes.

Recent cases in which the role of traditional modes has been recognized include the Karachi Development Plan, 1974-1985, referred to earlier.[4] Proposals there were based on careful analysis of the capital and operating costs of alternative modes and the different types and levels of service they are capable of providing. Measures of the kind suggested above are being considered now in the program for low-income settlement.

Minibus Systems

The minibuses of Karachi, the jeepneys of Manila, the tap-taps of Port-au-Prince, to name just a few, provide useful transportation services for a part of the low-income populations of these cities, but, generally, only for those approaching middle-income status.

The ease with which services can be expanded with project assistance will vary considerably from place to place, depending on the extent to which vehicle bodies can be produced locally. The minibuses of Karachi are wholly imported; the jeepneys in Manila, as the name suggests, originated with an abundance of war surplus jeeps; the tap-taps in Port-au-Prince are locally converted small pickup trucks.

In some situations, there are likely to be sustained roles for such vehicles, for example, where the main road system is fairly rudimentary and it is difficult to operate conventional buses, as in Port-au-Prince. Four-wheel-drive vehicles are used to penetrate the ranchos in Caracas. In other cases, such as Karachi, however, much of the demand for minibuses arises because of the shortcomings of the conventional bus system. In these latter cases, the operation of minibuses needs to be regulated carefully to ensure that the economies of scale of well-managed conventional bus operations are not foregone. Minibuses typically operate on fixed routes with great flexibility in stops, but they are not as adaptable in their routing or as capable of

providing customized services as the more traditional modes that use smaller vehicles.

Because of relatively high vehicle costs, minibus owners are usually middle income rather than low income. The extent to which minibus systems are capable of generating employment for low-income groups clearly depends on the extent to which body fabrication, repairs, and maintenance can be undertaken with semiskilled local labor.

For these reasons and because of relatively high fares, the role of minibuses in low-income transportation may be more limited than most modes discussed here. They can, however, provide a higher level of service than buses because they provide for all or most passengers to be seated, travel at higher speeds, and make fewer stops. Where there is a good case for their support, several types of project assistance may be worth considering.

One possibility is supporting minicooperatives for owner-operators who individually cannot raise sufficient money to purchase a vehicle. As joint owners and operators, they could share driving responsibilities and operate vehicles in multiple shifts, possibly including a late-night shift for goods transport.

Another possibility is the provision of technical assistance and credit for minibus body-building and maintenance shops. Present body-building techniques often result in rapid depreciation, but they could be improved quite markedly with minor innovations.

If there are really good grounds for sustaining minibus systems, adjustments in import regulations and tariffs may be justifiable. This possibility should be evaluated carefully to guard against the possibility of supporting a mode whose present popularity is primarily a result of poorly managed conventional bus systems.

Buses

Buses will probably play a major role in transportation for the poor throughout the foreseeable future in most cities of the developing world. Although many bus systems are poorly managed at present, dramatic improvements in services for low-income groups can be achieved relatively quickly through programs that combine the purchase of additional vehicles with improvements in management, routing, and scheduling.

Even though buses do not have the lowest capital or operating costs among public mass transit modes, their relatively low costs and their great routing flexibility enable them to contribute very effectively to the goal of keeping essential transportation costs low and levels of service high. In most cities, efficiently operating bus systems are

capable of serving all but the very lowest income groups without reliance on subsidies.

In large urban centers, buses frequently carry at least 50 percent of all nonwalking passengers and are the most important single component of city passenger transportation systems. Even if later economic development makes it possible to add fixed rail services to urban systems, it is likely that buses will continue to play a major role in the developing areas (as they still do in Tokyo and London). Their flexibility allows service areas and routes to be tailored to demand. They usually have higher operating costs and lower capital costs than light rail (tram) systems, but buses provide greater employment opportunities per vehicle.[5]

In undertaking projects to improve bus systems, it will often be important to incorporate at least eight types of action, each with a different degree of emphasis in specific instances. First, it will usually be necessary to expand bus fleets. In many major urban areas, shortages of foreign exchange and limitations in local capacity for production have resulted in fleets that would still be far too small even if they were well managed. Second, it may be desirable to provide funding and technical assistance for the design and production of complete vehicles or major components (for example, local bodies on an imported chassis, as is frequently the custom already). The importance of improved design to facilitate local maintenance and reflect local climatic and cultural characteristics should not be underestimated. A major cause for underutilizing existing fleets is simply the fact that imported vehicles do not function well under local conditions.

Third, it is likely that technical assistance will be needed to improve system management. Deficiencies usually range from service planning, including routing, scheduling, and pricing, through purchasing procedures, workshop management, and maintenance. Management weaknesses are often the single greatest contributor to ineffectiveness in services. This problem is typically more severe where bus services are in the public sector.

In one major city in which the public sector provides about 25 percent of the buses operating daily, with the remaining 75 percent in the private sector, the differences in performance are striking. Over a recent period of about 15 years, the publi[illegible]tor acquired more than 1,000 new vehicles and 500 used vehicles. At the end of the 15-year period, only about 300 of the total 1,500 were operating. Over one-third of the buses in the private sector are more than ten years old, but a much greater proportion of those buses is kept in adequate working condition.

If conversion from private to public management seems desirable for ideological or other reasons, it should be approached cautiously, while essential private sector services are maintained. Among their

other problems, public sector operations are often highly susceptible to political influence, which adversely affects efficiency. In most situations where private operations are feasible, it is important to maintain ease of entry into the industry to encourage competitive efficiency.

Fourth, realistic fare structures must be established so that systems are commercially viable. Cities in a number of parts of the developing world have demonstrated that well-managed services can charge fares that are low enough to be within the reach of most low-income groups.

Fifth, import regulations and tariffs, along with vehicle and fuel taxes and licensing fees, should encourage rather than hinder the development of effective bus services. If substantial losses of revenue result, tariffs, taxes, and licensing fees for private automobiles and other relatively inefficient vehicles should be increased. These increases may achieve two purposes: they may compensate at least partially for reduced revenues from levies on buses, and they may discourage use of less efficient vehicles.

Sixth, it may be necessary to construct additional bus terminals and/or intermodel terminals and improve facilities in existing terminals. Seventh, it may be necessary to improve overall traffic operations before full advantage can be taken of potential bus efficiencies. Improvements might include the following: specific regulations favoring bus movements on major streets, parking restrictions on roads that should be available to buses, the establishment of exclusive bus rights-of-way, and integrated scheduling and routing of all major passenger transportation modes to achieve efficient and convenient intermodel transfers. Finally, in almost all cases, it will be necessary to undertake sustained driver training and road user educational programs to improve vehicle performance and reduce accident rates.

In summary, the potential benefits of bus systems include the provision of low-cost, convenient, and flexible mass transportation services accessible to most of the urban poor; generation of employment through production, operations, and maintenance; increased property values in areas where bus services are extended, including areas where low-income groups are likely to be property owners; and an increased total supply of land accessible for low-income household settlement.

Potential disadvantages of bus systems include high initial capital costs for vehicles, although space costs per passenger for buses are considerably less than the cost of both light and heavy fixed rail systems; substantial foreign exchange requirements for fleet expansions prior to local production playing a significant role; lower levels of service than achievable with fixed rail systems where population

densities are very high; and environmental pollution from bus noise and, if maintenance is inadequate, exhaust emissions.

Cases in which bus projects incorporating some or all of the types of action suggested earlier have been undertaken recently or are under consideration include Tehran, San Jose in Costa Rica, and Bombay.

Light Rail Systems

The term light rail refers here to modern versions of systems known as tram or streetcar systems. Light rail is used in order to avoid linking some misconceptions associated with earlier systems to more modern versions.

To suggest that cities in developing areas introduce a form of mass transportation that many cities in developed countries abandoned years ago might be considered anachronistic. However, careful analysis of modern light rail technology indicates otherwise. Indeed, several cities in Europe (including Frankfurt and Prague) continue to operate light rail services effectively. Some cities in the United Kingdom and the United States are considering the reintroduction or expansion of their services. A new service has started recently in Newcastle in the United Kingdom. In the United States, Boston and San Francisco have been expanding their networks.

Although long-term benefits are considerable, initial improvements in mass transportation for low-income groups through the introduction of light rail systems will take considerably longer to achieve than will improvements in existing bus systems. They will require careful demand analysis and planning, the creation of organizational capacity, and the installation of rail infrastructure, as well as the importation of vehicles, except in rare cases when existing railway workshop facilities make it possible to produce local light rail vehicles almost immediately.

Like bus services, light rail services are likely to have low enough user costs to be accessible to all but the poorest of low-income groups. When such systems share roadways with other vehicles, they provide the equivalent of three lanes of highway capacity. When light rail systems have exclusive rights-of-way, they provide the equivalent of more than nine lanes of highway traffic capacity.

Capital costs for light rail rights-of-way and equipment are normally less than for heavier rapid transit modes. Although vehicle capital costs are higher than diesel buses, greater vehicle capacities and longer service life considerably reduce the disparity between the returns on bus investments and light rail investments.

Light rail systems can provide better levels of service than buses in high-density, congested central city areas and high-density corridors. Properly designed vehicles can permit fast loading and discharge of passengers. They can make frequent stops in central city areas. In countries with experience in the production and operation of conventional rail equipment (for example, India and Pakistan), conversion to the production and maintenance of light rail urban mass transit vehicles may be possible relatively quickly.

Overall, the potential benefits of light rail systems include most of those identified for buses, with buses having the advantage of superior routing flexibility. Other potential rail system disadvantages include higher capital costs per occupied passenger space than for buses and potential interference with other road traffic.

At least five types of action should be considered in the development or improvement of light rail systems. First, it may be necessary to provide technical assistance for system planning and project feasibility studies. This is likely to be an important component in all transportation undertakings, but it is especially important for new systems.

Second, it may be desirable to designate and preserve rights-of-way for light rail routes as soon as initial planning work has identified desirable routings. Pressures for urban land, especially in locations where densities make light rail routes desirable, are so great that it may be very difficult to acquire appropriate rights-of-way. To reserve rights-of-way prior to actual use, it is desirable to establish some controllable interim use; for example, exclusive bicycle lanes or exclusive bus lanes. If they are designated but not used, it may be difficult to prevent irreversible encroachment (or encroachment that is very expensive to reverse) by commercial users and squatters. Third, technical assistance is likely to be necessary to help establish local staff capacities and facilities for the operation and maintenance of initial system improvements. Fourth, technical assistance may be needed to support the production of light rail equipment where previous experience with conventional rail systems or other conditions make this feasible. Finally, in addition to training managerial and operating staff, a sustained public information program may be necessary in order to inform users of routings and services, to help users understand fare structure, and to achieve the proper use of vehicles.

In several situations in developing countries, light rail systems have been proposed or are already in use. Karachi had a 1972 population of 4.2 million. A series of heavily traveled corridors exist or will emerge during the next 10 to 15 years. Before preparing a comprehensive metropolitan development plan for the 1974-85 period, including broader perspectives sketched up to the year 2000, three alternative public mass transportation systems were identified and analytically tested. One focused on improvements in the existing bus

system, as well as improvements in the limited conventional urban rail system that already existed. A second was for improvements in the bus system, introducing a new light rail system along with a new heavy rail rapid-transit spine for the most heavily traveled corridor. The third combined bus improvements with new light rail services, including two light rail routes to be substituted for the new, heavy rail rapid transit spine of the second alternative.

The analysis indicated that the first alternative would be the best one up to about 1985, with a major focus on bus improvements. After 1985, the analysis showed that system development should be of the type identified in the third alternative, with the focus on light rail.[6]

Diesel trams have been operating in the major commercial streets of Karachi since the turn of the century and have provided an efficient service with remarkably ancient equipment. In 1972, they carried approximately 44,000 passengers daily. Unfortunately, the service was terminated recently for reasons other than cost effectiveness, but the possibility of developing a new light rail system is under consideration.

Calcutta, with a metropolitan population projected to exceed 9 million by 1976, is another example in which a long-established tram system (in that case, electric) has been providing effective service in the heart of the city (as well as in several older suburbs).

Conventional Rail Systems

Conventional rail systems already provide important services for low-income groups in many urban areas in the developing world. They are particularly useful in providing links between central city areas and suburban areas. Suburbs often include semivillages, where low-income households remain while earning their livelihood from the city. They also include outlying areas, in which low-income groups have been located as a result of public policies.

Conventional rail systems with diesel locomotion are likely to be lower in capital cost per occupied passenger space than rail rapid transit or electrified light rail systems. Their operating costs per 1,000 passenger miles are likely to be considerably lower than those of minibuses, diesel trams, electric trams, or rail rapid transit. It is therefore likely that conventional rail systems will be able to provide services for all but the poorest of low-income people. They may be able to reach at least as far down the income scale as buses.

The speed with which improved services for the poor can be achieved through conventional rail projects will depend largely upon whether those improvements can be initiated in an existing sytem. In many situations, the creation of a completely new conventional rail

system for commuting may not be sound; the development of a modern light rail service may be a preferable alternative.

The benefits that conventional rail systems can yield include those offered by buses, except that routes are fixed and stations must be relatively widely spaced for efficient operation.* They also relieve loads on the street system. A major disadvantage of a conventional rail system is the high capital outlay required to initiate new system development. This is much less of a problem, of course, if improvements in services are to be based on an existing rail system.

Existing urban rail systems in the developing areas frequently suffer from poor management and, in some cases, from limitations on the importing of some of the equipment needed for modernization. Line capacities are often affected adversely by existing signaling systems and by the mixes of fast and slow passenger and freight trains that prevail. In some cases, rail capacities are underutilized because of a lack of coordination in routing and scheduling between rail and other modes.

Project components for the improvement of transportation through existing conventional rail systems could include the following:

1. There could be assistance to purchase additional locomotives and carriages.

2. There could be technical assistance and funding for the production or maintenance of rail facilities and equipment.

3. There could be technical assistance to improve system management, including purchasing procedures, line maintenance, vehicle maintenance, signalization, scheduling, and the integration of operations with other modes.

4. There could be funding and technical assistance for improvements in and/or additions to existing facilities. Examples include the following: electrification to save foreign exchange if fuel must be imported, to increase line capacities, and to improve levels of service; the introduction of isolation spurs or dead-end snags for faster handling of trains at stations where reversing is to occur; the introduction of grade separations where road-rail conflicts are severe; the duplication of tracks over heavily traveled sections; the introduction of additional stations to improve accessibility for low-income groups; and improvements in facilities available in existing stations and in the utilization of platforms.

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*Spacing should generally be not less than one mile apart in densely settled areas and between two and four miles apart in outer suburbs.

5. There could be changes in fare structures to achieve greater equitability for low-income groups and/or greater economic viability for the system.

6. There could be improvements in the information available to existing and potential users to expand demand and to encourage a more effective use of existing facilities.

In Calcutta, the electrification of all suburban lines was already well underway in 1967. Proposals have been made for additional running lines and for grade separations at major road-rail intersections.

In 1967, terminal capacity at the Howrah and Sealdah stations, both close to the heart of the city, was not well utilized, even during peak hours. During the morning peak period at Howray Station, for example, seven platforms were used by Eastern Railway services, but individual platform use amounted to only one or two trains per hour.

In the Karachi Development Plan, with its focus on short-run capital conservation and immediate action, recommendations have been made for improved scheduling, the introduction of isolation spurs at selected stations, the construction of a new station, and the integration of scheduling and fare structures in the rail and bus systems.

Rail Rapid Transit Systems

Rapid transit systems are usually high-speed, underground or grade-separated mass transportation systems free from the interference of other traffic. In many cases, underground and grade-separated surface systems are combined.

In most cities in the developing world, rapid transit development would constitute an entirely new element in urban mass transportation systems. This fact, along with the scale at which rapid transit systems have to be initiated, their high capital costs, and their sophisticated technologies, means that it is unlikely that significant benefits can be enjoyed within the first three or four years of their initiation. They cannot be considered to be immediate action responses to urgent problems but must be viewed as potentially important elements in programs for the long-term improvement of mass transportation services.

The potential significance of rapid transit as a service benefiting the poor will differ from place to place. In many situations, a large proportion of low-income households will be unable to use rapid transit services unless services are subsidized. Capital costs per occupied passenger space are much higher than for buses, conventional rail systems, or light rail systems. Operating costs per 1,000 passenger miles, though lower than for buses, are likely to be higher than those for electrified light rail or conventional rail.

Although rapid transit projects may be of only limited benefit for the poor, they are included in the present discussion because there may be situations in which rapid transit can generate benefits for at least part of a city's poor population and because rapid transit is often a politically popular mode (at least prior to a serious analysis of cost effectiveness). (It is popular with foreign consultants and contractors, who find high-technology transportation and tunneling profitable; this makes it especially important to be aware of its limitations.)

The benefits achievable with rail rapid transit are similar to those achievable with conventional rail and light rail systems, except that rail capacities are considerably higher. Grade-separated systems have the added advantages of not interfering with other surface transportation and being capable of achieving better penetration of high-density areas.

The potential disadvantages of rail rapid transit, particularly underground systems, should be considered carefully. One of the most serious disadvantages in a developing country is the very high initial capital cost involved. Moreover, rail rapid transit systems use relatively capital-intensive technologies, not only for construction but also for operations and maintenance. Because of high costs, rail rapid transit systems require heavy subsidies to ensure accessibility to low-income households. Their benefits tend to be benefits for the community as a whole rather than primarily for the urban poor.

Rail rapid transit is likely to be a necessary component of major urban transportation systems at some point, but if both equity and the efficient short-run use of resources are of concern, the timing of the introduction of rapid transit is crucial.

In situations in which there does appear to be a case for introducing rail rapid transit, the types of project elements that need to be considered will be similar to those suggested for light rail systems.*

Roads and Road-Related Facilities

The term road refers to individual roads and/or road-related facilities, such as parking spaces, spaces for roadside vendors, sidewalks, bus stops, and street lighting.

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*The argument for the early introduction of rail rapid transit may be strongest where large numbers of low-income households are in suburban areas, as in some Latin American cities; but even in these cases, buses and light rail systems should be considered carefully as alternatives.

Additions to road networks or road improvements intended specifically to benefit the poor might be considered in two categories: improvements or additions in areas in which low-income groups are settled or conduct their business and projects undertaken elsewhere, whose impact on the poor is chiefly through the employment generated by the construction and maintenance involved. Only the first type of project is discussed here.

Although major road projects will usually take some time to yield benefits, there are many types of projects (such as paving improvements, small changes in geometries, or the construction of simple lanes in low-income areas) that can help improve conditions for the poor almost immediately.

The obvious purpose of road projects is the improvement of conditions for the movement of pedestrians and vehicles serving or operated by members of low-income groups. But this should not be assumed to be the only (or, in some cases, even the major) purpose of such projects.

For low-income groups, in particular, road-related facilities serve a wide variety of purposes. These include the pedestrian movement dealt with elsewhere in this chapter; vehicular movement of many types, ranging from traditional small vehicles to buses and light rail or even elevated rail rapid transit; daily routines, such as water gathering from public fountains, laundering in gutters and roadside pools, and urinating and defecating; large and small public meetings; informal commercial operations, such as roadside retailing, and personal and business services, such as barbering and letter writing; informal manufacturing and service activities, such as automobile repair; informal education through schoolrooms on sidewalks and the variety of experiences to which passersby have access in areas in which roads or sidewalks serve a variety of urban purposes; celebrations, such as weddings and religious festivals, and entertainment; daily play for children, for which roads and sidewalks are often the only spaces available; waste disposal, such as the dumping of solid refuse; open surface drains; and sewers.

In undertaking road projects to benefit the poor, the possibility of a road or pathway being used for such a wide variety of purposes should be kept very clearly in mind. Nontransportation functions should not be considered to be nuisances in all cases. Indeed, multiple uses of street spaces where traffic levels are light should often be considered as a very efficient use of scarce public capital and an effective means of preserving rights-of-way that will be necessary for transportation in the future.

Well-conceived road projects that recognize the many possible purposes of public space are capable of benefiting virtually all income levels in a city's low-income population.

In all cases, at least four elements should be of major concern: (1) careful analysis of the full variety of purposes to be served by road spaces and road-related spaces, including an analysis of the potential changes in use that should be provided for (for example, when it can be foreseen that a local right-of-way should later be converted to an important traffic route); (2) a high degree of efficiency in the use of scarce capital resources in the short run; (3) the generation of as much employment as possible to construct and maintain road and road-related spaces; and (4) the achievement of as much local community involvement as possible in constructing and maintaining the spaces and facilities installed. As part of this concern, the design of rights-of-way, drainage channels, pedestrian gathering places, and other facilities should facilitate private household maintenance, because public maintenance will probably be unreliable.

The project types that are likely to be worth considering range from major street and bridge construction, to lightly surfaced lanes, to street lighting, drains, and minor changes in geometrics. The following are some project types worth considering: (1) construction and maintenance of arterial and/or other roads to link low-income areas with places of work; (2) bridges and/or footbridges across riverbeds where low-income groups are squatting, to provide better access to jobs and other urban facilities; (3) interior streets in low-income settlement areas to facilitate improvement of mass transit services for the poor in those areas; (4) interior multipurpose streets and lanes in low-income areas to accommodate light traffic, as well as the other types of activities suggested earlier; (5) improved paving, drainage, and lighting for existing internal streets and lanes in low-income areas—to improve accessibility under all weather conditions, to improve safety, and to accommodate nontransportation activities of the types suggested earlier; (6) reconstructed curbs, improved intersections, and closing off of existing narrow streets to intersections to differentiate pedestrian and vehicular rights-of-way more clearly and to increase street capacities; (7) closing off of existing narrow streets to all vehicular traffic except emergency vehicles, and possibly bicycles, to make those streets more useful for the important nontransportation purposes they serve; (8) improved bus stops to increase safety, to provide weather protection, and to facilitate orderly queueing; (9) establishment of off-street parking spaces for automobiles, animal-drawn goods, passenger vehicles, bicycle rickshas, autorickshas, and bicycles; and (10) technical assistance and funding to assist in the development of more labor-intensive techniques for road construction, bridge construction, and road maintenance. Obviously, projects of these types should be coordinated fully with improved mass transportation of the types discussed earlier and improved traffic operations.

Traffic Engineering

Many traffic engineering projects (for example, one-way street systems, signalization, channelization, and directional signs) are likely to be undertaken to benefit a variety of groups rather than the poor specifically. There are other projects, however, which can have a more direct impact on low-income groups. Four of these are mentioned below.

1. Vehicles should be excluded from multipurpose streets in low-income areas, as suggested in the previous section.
2. Free vehicle turns should be avoided at intersections where such turns would be hazardous for pedestrians, as mentioned earlier in the discussion of pedestrian facilities.
3. Parking facilities should be provided, and parking regulations should be enforced. Proper provision should be made for parking vehicles used and or operated by members of low-income groups (for example, bicycles, animal-drawn goods, passenger vehicles, and rickshas). Parking of private vehicles in areas where this hinders mass transportation services for low-income groups should be regulated strictly.
4. Pedestrian movements across major streets should be controlled through proper placement and enforcement of pedestrian crossings to increase the safety of pedestrians (many of whom will be members of low-income groups) and to utilize existing street capacities more fully.

All of these measures are low-cost means of increasing safety and convenience for members of low-income groups. While such measures are not of major importance in themselves, they can be useful supplements to other transportation projects.

Education and Information

Projects to educate road users (at all income levels), as well as the projects to provide information on transportation for low-income groups, will usually be supplements to other transportation projects. However, in some situations, it may be possible to achieve considerable improvement in the use of existing facilities through education and information projects alone.

Two types of road user education that are important include education and enforcement of regulations for all road users to encourage them to respect the rights of pedestrians and the rights of low-income operators of small vehicles and education and the enforcement

of regulations for low-income vehicle operators specifically, to increase their own safety as well as that of others and to achieve fuller utilization of street capacities.

Information services specifically for the poor should include information on the transportation alternatives available to them and information on their rights as pedestrians and vehicular road users. Information should cover the actions all income groups are entitled to take against others when their rights have been infringed. Information services of this type might well be incorporated in the programs of multipurpose community service centers in low-income areas.

Economic Characteristics of Alternative Modes

The following data presented in Tables 10.1 and 10.2 are from a recent urban planning study in Karachi. They are indicative of the relative capital and operating costs of alternative transportation modes that might be considered for low-income groups. Data for additional modes, such as scooters, motorcycles, motorcars, and taxis, are also presented as a reminder of their high costs and relatively inefficient use of public road space. It has been estimated that private vehicles in Karachi generate 44 percent of road passenger miles and 83 percent of road passenger space, while buses generate 55 percent of road passenger miles and only 17 percent of road passenger space.[7]

The data presented in the tables are of interest for comparative purposes. Since they are for 1972, their absolute numbers are already out of date. Some of the comparative characteristics should be treated with caution also, since they do not reflect recent increases in oil prices.

INSTITUTIONAL ASPECTS

Transportation projects undertaken to benefit low-income groups are unlikely to be fully effective for the poor themselves or efficient from an overall resource utilization point of view unless they are part of a systematic transportation planning and implementation program for the urban area in which they are located. Decisions on the mix of modes to be encouraged, route locations, the scheduling and pricing of mass transportation services, traffic engineering, and the many other types of decision that need to be made to achieve effective urban transportation must be made in an integrated way in conjunction with decisions on other urban services and land use. Transportation is a

TABLE 10.1

Summary of Economic Characteristics of Private Modes of Transportation, Karachi, Pakistan, 1972 (in rupees)[a]

Costs	Walk	Bicycle	Scooter	Motor-cycle	Motorcar (in cubic centimeters) 600	1,200	2,400	Autoricksha	Taxi
				Unit Cost of Vehicle[b]					
Capital cost									
Total	—	300	3,800	4,400	23,200	29,900	62,400	11,500	29,900
Economic[c]	—	200	2,000	2,700	13,500	17,500	38,000	6,900	17,500
Foreign exchange component[d]	—	60	1,800	2,200	12,000	15,500	35,000	5,500	15,500
Operating cost[d]									
Total	100	50	170	160	360	500	880	250	380
Economic	100	50	50	40	100	100	270	70	110
Foreign exchange component	—	10	30	30	60	60	170	40	60

				Cost per Occupied Seat[e]					
Capital cost[f]									
Total	—	300	3,165	3,365	12,676	16,334	34,041	9,350	18,341
Economic	—	200	1,660	2,249	7,376	9,562	20,763	5,610	10,735
Foreign exchange component	—	60	1,500	1,833	6,557	8,469	19,124	4,472	9,508
Operating cost[g]									
Total	100	50	140	130	200	270	480	200	230
Economic	100	50	40	30	50	70	150	60	70
Foreign exchange component	—	10	30	30	30	40	90	30	40
Time incurred[h]	20,000	6,000	3,000	2,400	1,700	1,700	1,700	3,000	1,700

[a]One rupee equals approximately 12 U.S. cents at official 1975 exchange rates.

[b]No right-of-way costs are included.

[c]Economic cost equals total less taxes.

[d]Operating costs are in rupees per 1,000 vehicle miles and include depreciation and maintenance in all cases but exclude wages of drivers for walk, bicycle, scooter, motorcycle, and motorcar.

[e]Cost per occupied seat are calculated on observed average vehicle occupancies over 24 hours.

[f]Rupees per passenger space.

[g]Rupees per 1,000 passenger miles.

[h]Minutes per 1,000 passenger miles.

Source: Karachi Development Authority, Master Plan Department, Karachi Development Plan, 1974-1985 (Karachi, Pakistan: Karachi Development Authority, 1973), p. 247.

TABLE 10.2

Summary of Economic Characteristics of Public Modes of Transportation, Karachi, Pakistan, 1972 (in rupees)[a]

Costs	Mini-bus	City bus	Express Bus Busway	Tram Diesel	Tram Electric	Rapid Transit Elevated	Rapid Transit Subway	Suburban Rail Diesel
	Unit Cost of Vehicle							
Capital cost								
Total	54,000	143,500	143,500	85,000	1,310,000	2,200,000	2,200,000	963,000
Economic[b]	32,400	94,800	94,800	70,000	1,200,000	1,828,000	1,828,000	800,000
Foreign exchange component	25,000	79,600	79,600	22,000	1,090,000	1,371,000	1,371,000	600,000
Operating cost								
Total	720	2,000	2,250	2,500	3,000	3,500	3,750	3,000
Economic	170	1,250	1,350	1,250	2,250	2,750	2,850	1,500
Foreign exchange component	100	500	500	200	1,500	2,000	2,100	660

				Cost per Occupied Space[c]				
Capital cost								
Total	3,888	2,870	2,870	1,130	6,390	11,000	11,000	4,815
Economic	2,333	1,896	1,896	930	5,850	9,140	9,140	4,000
Foreign exchange component	1,800	1,592	1,592	290	5,320	6,860	6,860	3,000
Operating cost								
Total	52	40	45	33	15	18	19	15
Economic	12	25	27	17	11	14	14	8
Foreign exchange component	7	10	10	3	7	10	10	5
Time incurred	2,000	5,000	3,000	10,000	4,000	3,000	3,000	3,000

[a]One rupee equals approximately U.S. $0.12 at official 1975 exchange rates.

[b]Economic cost equals total vehicle cost less taxes.

[c]Costs per occupied space are calculated on expected vehicle occupancies during peak hours.

Source: Karachi Development Authority, Master Plan Department, Karachi Development Plan, 1974-1985 (Karachi, Pakistan: Karachi Development Authority, 1973), p. 243.

very clear case in which the system effects of individual projects need to be analyzed explicitly.

The types of institutional arrangement necessary will vary from place to place. As one example of the kinds of action that may be appropriate in a situation where various aspects of urban transportation are presently the responsibility of a variety of agencies (a situation encountered in many cities), the recommendations prepared for Karachi are of interest.[8] They indicate the kinds of actions that might be taken prior to the creation of a permanent urban transportation agency.

Creation of Transportation Coordination Agency

The first step recommended was the creation of a Karachi Metropolitan Transportation Coordination Agency. The concept of an agency rather than a large council of representatives from the various units of government concerned with transportation and traffic in the region is important; a council would be too unwieldy to accomplish the objectives sought. The agency should consist of professionals. An advisory council should be constituted as an adjunct to it in order to bring together representatives of the various governmental units to be coordinated and, perhaps, to provide policy directives. The agency could be attached to an existing provincial department.

The agency would conduct or sponsor studies to investigate the need for, and the feasibility of, a semiautonomous Metropolitan Transportation Authority. The critical inquiry would be concerned with identifying functions that could be performed more effectively by a single semiautonomous authority with jurisdiction over the entire metropolitan region. The agency would examine and pass on all proposed major schemes for public investment in transport facilities, not only public but also publicly supported private facilities. The function might also include reviewing applications for bus franchises. The addition of a bureaucratic hurdle in the licensing system was not suggested; rather, a mechanism by which the agency might be appraised of important decisions was encouraged. A similar review function might be performed in connection with proposed highway widening and the extension of new construction schemes of the various agencies concerned. The agency might identify deficiencies in the maintenance of highways and transportation facilities and coordinate the activities of the units responsible. It might provide a forum for arbitrating or mediating disputes between different agencies with conflicting operations or programs (such as a dispute on whether the railway company or the municipal corporation should maintain a particular overpass or situations in which one agency might lay streets that were incompatible

with the surrounding road network under the jurisdiction of some other body). It might be made responsible for preparing performance standards for road design and construction, along with similar types of transportation planning and development. It might develop a central repository of traffic transportation data to be made available to all concerned governmental and semipublic organizations in the metropolitan region. After several years of operation, a full Metropolitan Transportation Authority might be recommended by the coordinating agency.

Financing Transportation Projects

The financing of transportation projects is too complex and the variations in approach too dependent on local conditions to permit more than a brief commentary here. In each situation, the identification of appropriate financing methods will require special study.

Financing Public Transportation Services

It will be appropriate in most situations to use the principle that public transportation should be paid for by users and other beneficiaries, such as property owners, along with the principle that standards of service (presuming efficient management) should be such that each service can be financially viable on this basis. Private secto bus and light rail operations in parts of the developing world have s n this to be possible. Financial assistance may be necessary for ic or private sector entities to initiate new services and/or improvements in existing services, but that assistance is usually best provided in the form of loans rather than grants.

If there are good reasons for supporting private sector operations, it may be appropriate to establish a public transportation financing entity (for example, a state corporation) to provide credit for private transportation owners of common carrier services for the purchase of new equipment and major repairs to older equipment. Financing could be provided for new city buses, the purchase of new bodies, and the acquisition of parts. In addition, technical assistance and funding might be made available to owners of smaller vehicles (in small fleets, possibly through cooperatives or singly). Loans might be provided also to small-scale goods transporters for the purchase of vehicles.

In addition to purely financial activity, the public entity could undertake a number of support programs to increase the effectiveness of loans. It could aid potential clients in selecting equipment, provide instruction in simplified bookkeeping, generally assess projects to

be undertaken, process the paperwork needed for importing equipment, provide technical engineering staff for constructing bus and truck terminals, and aid in establishing new owner cooperatives. The agency could assist the government in standardizing vehicle types and participate with police and insurance representatives in inspecting equipment at various locations to ensure safe operation. It could also provide a forum for government to monitor the opinions and problems of transport operators.

In effect, the agency could act as a means of encouraging the participation of available private capital for a very important public service. Borrowers could obtain title to vehicles at the end of the loan agreement, and the government could regulate the public transportation system through combined efforts of the financing agency and the police, without having to assume responsibility for the operation of the system. This could result in relatively low costs for both the government and the public.

The funds for the agency should be assembled as fully as possible from direct and indirect levies on road users, with relatively high levies for the more inefficient ones (including automobiles), from general property taxes, and from business income taxes. In the latter two cases, they should reflect increases in property values and business incomes that can be expected to result from improved transportation. Levies on road users and business taxes will often be nonlocal taxes. The funding agency proposed might be established at the state, provincial, or central level.

Financing Public Infrastructure for Transportation

The forms of funding most appropriate for transportation infrastructure will vary from place to place. Again, as a general guide, these works should be funded as fully as possible from user levies, property taxes, and business income taxes, since this funding would come from those benefiting from the facilities. In the case of infrastructure, it often will be possible to raise funds also from betterment charges established to reflect increases in the value of specific properties that can be shown to be beneficiaries of the improvements. This latter device has worked well in Medellín, Colombia, where it is known as valorización.[9] Three conditions that seem to be necessary for the effective use of betterment charges are clearly demonstrable increases in property values resulting from the infrastructure, general increases in property values and incomes associated with economic growth, and strong administration.

Participant Mobilization

The importance of involving low-income groups in projects intended to benefit them has been stressed for all sectors. In transportation projects of the kind suggested, several opportunities for such involvement present themselves.

As a minimal step, basic transportation information, including the kinds of information suggested earlier, should be made available to such groups. A second type of involvement can be encouraged through inducements to low-income groups to take direct responsibility for the construction of pedestrian pathways, minor streets, and other relatively simple facilities in their settlement areas. Inducements might include local tax credits for works completed or payments in kind (for example, bicycles and building materials for housing). Participation by the poor in transportation policies affecting the services they use should be provided wherever possible by ensuring that low-income groups are represented directly on transportation committees or boards that determine those policies.

COMPLEMENTARY ACTIONS THAT MAY BE NECESSARY

Urban transportation projects are undertaken not only to provide transportation services but also to guide the growth of urban land use, to influence the productivity of both public and private investments in urban areas, and to increase the public revenue base.

Some of the policy actions likely to be necessary to reinforce the benefits of such projects have been identified already, including policies concerning the pricing of essential commodities in which transportation costs are important, taxation, and land use.

In addition to such policy support, specific types of complementary action may be needed in other sectors to support projects in transportation.

For example, when transportation facilities and services are being used to guide land use, projects in communications, power, water supply, and sanitation should be designed to reinforce their impact. In addition to this, installation of utilities should be designed and scheduled so that both the initial installation and maintenance will interfere as little as possible with the installation and operation of transportation facilities and services, and vice versa. It is commonplace to find road construction and repairs disrupting utilities and to find utility additions and repairs (and even initial installations) causing severe interruptions in both pedestrian and vehicular movements.

There should be a similar concern with coordination in implementing transportation projects and projects in housing, health, and

education if low-income settlements are to function properly from their inception.

OTHER LIKELY IMPACTS

Because of the key role they play in the development and functioning of urban areas, transportation projects undertaken primarily to benefit the poor are likely to have a substantial impact on other groups.

For example, they would benefit middle- and upper-income households whose property values were increased. They could result in higher productivity and profits for some middle- and upper-income enterprises, because of the higher worker productivity achieved as a result of reductions in time and fatigue in journeys to work and because of improved goods transport. They could result in increased public revenues because of increased property values and business incomes.

On the negative side, there could be higher transportation costs for middle- and upper-income groups, as a result of cross-subsidies in new transportation pricing structures, because of progressive taxation and other levies on transportation, and because of increased travel times for automobiles. Some residential and other space may be lost in providing improved facilities, though this should be minimized as a matter of policy. There may also be a reduction in environmental quality from noise or air pollution resulting from increased traffic (and changes in types of traffic) associated with improved transportation.

NOTES

1. Karachi Development Authority, Master Plan Department, Karachi Development Plan, 1974-1985 (Karachi, Pakistan: Karachi Development Authority, 1973), p. 234.

2. Ibid., pp. 244, 247.

3. See, for example, The Metroville Cell, Master Plan and Environmental Control Department, "Draft Proposals for the Landhi 'Metroville' Project," mimeographed (Karachi, Pakistan: Karachi Development Authority, September 1975).

4. Karachi Development Authority, Master Plan Department, op. cit., pp. 233-78.

5. Ibid., p. 241.

6. Ibid., pp. 233-78.

7. Ibid., p. 21.

8. Ibid., pp. 233-78.

9. See, for example, Instituto para el Desarrollo de Antioquia (IDEA), Manual para la Contribución de Valorización (Medellín, Colombia: IDEA, June 1967).

11

PROJECTS IN MANAGEMENT AND FINANCE

ROLE OF SUCH PROJECTS

Some of the managerial and financial aspects of providing facilities and services in individual sectors have been covered in previous chapters. Many of the benefits potentially achievable from projects in individual sectors are likely to be negated or reduced if there are not simultaneous improvements in overall urban management and finance. This requires attention to those aspects of management and finance that cut across the boundaries of individual sectors. These include improvements in fiscal systems to achieve greater equity for the poor, as well as in urban land management and in the design of legal processes that will help achieve greater equity for low-income groups. It also includes the achievement of greater competence in integrated urban and regional development planning, in establishment of intersectoral priorities, and in intergovernmental coordination.

The system used to finance capital and operating expenditures in a particular locality may have an impact on the urban poor in a variety of ways. It may, for example, affect the disposable incomes of poor households and their competitive position in seeking essential goods and services. Property taxation, the credit mechanisms available, and the types and levels of financing used for urban infrastructure are likely to affect the value of assets held by the poor. Sales taxes that can be transferred to the consumer, public pricing policies, and price regulation can substantially affect consumption costs. Land management policies and land taxes have an impact on land ownership and values, as well as on transportation and utility costs. The credit available to the poor is likely to affect both immediate consumption

and the accumulation of assets. The credit available to those providing services for the poor will affect the supply and pricing of those services.

POLICY IMPLICATIONS

There usually will be a need for clear directives from the highest level of government on priorities for the urban poor in all aspects of public management and finance. Current practices tend to be biased in the opposite direction in many countries because of the influence of the affluent at all levels of government. As part of high-level policy directives, there will need to be clear policy support for development of more complete information on the condition of low-income households and the impact of public management and finance on them.

Even the highest positions in local government usually have low status relative to those at the state, provincial, and national levels. Local government salaries are usually low. If established civil services exist, the best people are often kept at the local level for as short a time as possible before being transferred to more prestigious positions in higher levels of government. These factors make it very difficult to attract and retain competent people at the local level. The consequences are disastrous for urban management.

In parts of Asia, particularly, there is also a tendency to encourage the development of generalist skills in career administrators. Urban management is, in fact, a highly specialized activity. This must be recognized if the levels of management necessary are to be achieved.

In some countries, including many in Latin America, no formal civil service exists from which urban management skills can be drawn. Administrative policies in future should ascribe high status to positions at the local governmental level, provide for the establishment of a cadre of urban management specialists, and encourage longevity of tenure for competent personnel at the local level. It is also important to have clear directives designed to achieve effective coordination at each level of government. These should include authority granted to the local level by higher levels that will enable local agencies to obtain information and collaboration from agencies above the local level.

Policies at the national and state or provincial levels should provide inducements for the use of private capital to finance activities that benefit the urban poor. Governmental resources alone will be inadequate for the scale of the problems to be dealt with. Formal private credit may not be attracted to fund projects for low-income

groups without guarantees and provisions for market rates of interest (rather than subsidized rates or other special incentives).

Policies at the national level, complemented by state or provincial and local policies, should encourage establishment of systematic priorities for using international funding to benefit the urban poor.

Although international agencies are giving increasing attention to povery groups, there are at least two problems to be dealt with in addition to the continuing inadequacy of levels of funding. They include: (1) the fact that priorities are sometimes imposed by international agencies by default, because national and/or state and local governments in the developing areas are not yet in a position to establish their own priorities systematically; and (2) with bilateral funding, in particular, there is sometimes a continuing tendency, carried over from the 1960s, to favor capital-intensive projects that provide the donor or lender with export opportunities.

PROJECTS WITH A POTENTIALLY HIGH IMPACT ON THE URBAN POOR

Creation of Institutional Framework for Integrated Planning, Budgeting, and Implementation

Even if the agencies responsible for projects in individual sectors already operate fairly efficiently, the benefits to be obtained for the poor from projects in those sectors are frequently reduced because of uncoordinated planning and implementation in individual sectors. If there is no integrated budgeting procedure for an urban area (typically the case, even with integrated sector budgeting at the state and central levels), priorities will probably depend more on the bargaining power of individual agencies than on the overall needs of poverty groups. More effective integration is likely to be necessary intergovernmentally, as well as at the local level.

Intergovernmental Integration

Urban development is even more heavily dependent on central and state or provincial participation in developing areas than it is in North America and Europe. This is particularly the case outside major metropolitan areas. With notable exceptions (for example, Medellín, in Colombia), local governments are often responsible primarily for everyday operations and maintenance, while state or provincial agencies (or local development agencies under the direct control of a state or province) undertake most development works. There typically is little coordination among agencies within a single level of government. There is very often almost no coordination

among levels of government. In addition to inefficiencies resulting from this, local areas also have the uncoordinated programs of higher levels of government imposed upon them with little regard for local needs or capacities.

In principle, it may be desirable to create a new intergovernmental form of governance for urban areas to recognize explicitly the key roles played by the central and state levels. It is unlikely that it will be possible to achieve this in the near future in most countries. An appropriate integrative framework may have to be achieved through the creation of a relatively modest catalyst agency to work within existing central, state, and local planning and budgeting procedures.

It is probably desirable to establish an intergovernmental policy body to guide urban growth. It usually will be necessary also to enact enabling legislation at each level of government. As suggested earlier, one purpose of enabling legislation enacted at the central and state levels should be to empower local agencies to obtain collaboration in projects from higher levels of government. Legislation should also enable each level of government to achieve coordination among the projects for which it is responsible.

If a central government entity responsible for urban policy does not exist, it may be appropriate to establish one—for example, a central governmental board or council with respresentatives of central government, state governments, and other persons designated by the central government. The central entity would formulate urban and regional planning policies and facilitate implementation of those policies through central, state, and local agencies. As part of its responsibility, it would identify the urban development potential of individual localities throughout the nation and establish priorities for central governmental support for the urban poor in each locality.

Legislation establishing the central governmental entity could require all central governmental agencies to follow approved urban and regional planning policies. It could also require provincial and other governmental agencies to pursue these policies in matters over which the central government has jurisdiction.

Among its other responsibilities, the central entity could maintain an inventory of proposed urban and regional planning policies, development plans, and schemes. It would incorporate information indicating the impact of these on the urban poor. It could also prepare annual reviews of the current inventory, identifying problems of coordination and recommending measures for their correction. If the central entity saw that action in the national interest was not likely to be taken by state or local agencies, it would have the authority to undertake appropriate action itself.

State governments might similarly establish urban and regional planning, or planning and development, entities with powers and

responsibilities analogous to those of the central governmental entity. Regional entities might be established within the state above the local level of government. In each case, overall planning should include explicit priorities for the urban poor.

Local Integration

The local level often will exhibit almost no local planning capacity; local budgeting frequently is rudimentary, with fragmented implementation. In rare cases, a municipal or local budget department may have a reasonably systematic procedure for establishing priorities and maintaining accounts to facilitate project evaluation. More typically, however, there will be an accounting office for recording possible sources of funding, making simple financial projections based on past expenditures, and recording the results of ad hoc budgeting decisions for individual municipal services. In such situations, it is desirable to introduce a set of procedures for systematic planning, budgeting, and evaluation. A local planning and budgeting entity established for this purpose should have explicit priorities for projects focused on the poor. It should monitor progress and take appropriate corrective actions.

Upgrading and/or Training Urban Management Specialists

Virtually all cities in developing countries are understaffed, at least in terms of the skills available. The scale and complexity of urban growth now demands serious attention at all levels of government through groups of competent specialists. These include chief executive officers, planners, budgeting specialists, accountants, legal officers, and other support staff, as well as the sector specialists required in individual executing agencies.

There is likely to be a fair amount of political fluidity at the local level in most countries. This makes it all the more important to build permanent and competent administrative staff groups to sustain urban development, so that reasonable continuity in the delivery of essential services for the poor can be achieved.

Project possibilities for strengthening intergovernmental and local urban administration through training and orientation programs include the four discussed below.*

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*The projects discussed do not include the support needed for developing specialized planning, budgeting, and implementing skills in individual sectors. They refer only to support that is likely to be needed for overall management and finance.

Orientation and Training for Policy Makers and Staff at National, State, or Provincial Levels. As suggested earlier, central and state governments will have an important role to play in urban development and in projects to benefit the urban poor. It is important for these levels of government to establish staff groups competent to undertake urban and regional planning work.

The orientation provided for policy makers should include these elements: (1) an analysis of prospects for urbanization in their own countries, the role of urbanization in overall social and economic development, and the role of low-income groups and informal sector activities in urbanization; (2) an identification of the instruments available to central and local governments for guiding urban growth and, specifically, for benefiting the urban poor; (3) a review of international experience in projects for the urban poor; and (4) the organizational, legislative, and fiscal implications of urbanization strategies for central and state governments.

At the staff level, training should include such subjects as the planning, programming, and budgeting techniques for urban and regional planning at the central and state levels, including techniques for project identification and project preparation, with emphasis on projects intended to benefit the urban poor; the framing of enabling acts and other legislation for urban and regional development at the central and state level; data management for urban and regional development at the central and state level; and techniques for providing assistance to local governments.

The training undertaken should be done predominantly in individual countries, although it may be supplemented by relatively short visits to other parts of the developing world. (Short visits might be made to developed countries, but they are likely to be less valuable than exchanges of information among developing areas.)

Training programs of these kinds are being undertaken through such entities as the Development Planning Unit in London, the Indian Institute of Public Administration in New Delhi, and at the policy-maker level in recent activities of the Administrative Staff College in Pakistan.

For policy makers at the local level, the kinds of orientation that are likely to be appropriate are similar to those suggested for central and state policy makers, with added emphasis on local problems.

Staff training should include such subjects as urban planning, programming, and budgeting, including project identification and project preparation; urban land management; the framing of development incentives and regulations at the local level; techniques for monitoring local development; local data management; and procedures for coordinating departmental and intergovernmental activities.

(Suggestions for the types of training appropriate for urban finance staff are discussed later.)

As in the training suggestions made for central and state levels, local level training should be in the locality concerned so that it can be related to actual problems. Again, it might be complemented with limited visits to relevant governmental agencies and projects in other developing areas.

Consultant services may be provided on an interim basis in each of the subject areas suggested for local staff training. However, since it is essential to develop local capacities for these functions, any outside assistance should be designed to build up local capacity. Also, explicit provision should be made for phasing out the assistance as soon as this is appropriate. For the same reason, local consultant services should be utilized rather than foreign consultant services wherever possible, since the costs of such services are likely to be lower and because there is a greater opportunity for maintaining continuity with local advice and support.

Support for Management Institutions of Local Government. There are a number of public administration institutions in developing areas providing support for local governments in a variety of ways. Some examples are municipal organization seminars for senior officers; training for staff groups in aspects of urban management and finance, including management and financing services in individual sectors; training in integrated planning; training in data management; the execution of technical studies for municipalities; the provision of technical advice and data to municipal consultants; the preparation of model legislation and regulations for the local level; the publication of information on municipal development and management; and the maintenance of technical libraries for municipal management.

An excellent example of one such institution is the Instituto Brasileiro de Administracão Municipal (IBAM) in Brazil, which has been supported by funding from the United States Agency for International Development (USAID), as have other entities concerned with local administration.[1] By 1976, IBAM was providing free assistance of various kinds to 2,156 municipalities (just over half of the municipalities then in Brazil) and some form of assistance to all 3,951 municipalities in the country.

Dissemination of Better Information on Urban Poverty

One factor contributing to the continued failure to deal seriously with urban poverty in many countries is simply the fact that middle-income administrators and the entrepreneurial elite cannot really comprehend poverty, which they have never experienced, or its causes.

Nor have they recognized the scale of the future urban poverty with which they are confronted. A great deal of wishful thinking is done, involving such programs as worker housing, slum clearance, and accelerated rural development. Through these, it is hoped that the problems of urban poverty can be remedied relatively quickly. There is an urgent need for sustained communication about the real causes of urban poverty and its prospects. Information should be focused on senior administrators at all levels of government. It should also be focused, obviously, on potential leaders among the poor themselves. The information provided should include a realistic appraisal of the problem and an identification of concrete steps that can be taken to yield visible, even though limited, results relatively quickly.

Action-Oriented Research

As a foundation for improving urban management, it is important to undertake action-oriented research and experimentation to identify the types of programs that are likely to be effective in dealing with urban poverty. Policy-oriented research of this type is a very appropriate target for international technical assistance and funding.

The work undertaken initially might include the following elements: (1) analyses of the consumption and savings patterns of poverty groups in individual urban areas; (2) analyses of the life cycles of rural-urban migrants and second-generation poor urban households; (3) analyses of the roles of women in low-income households and the identification of opportunities for them to participate more fully in the monetized economy, including greater participation in urban governmental positions; (4) experimentation with simplified and accelerated planning and budgeting procedures to facilitate projects focused on the urban poor; (5) legal research and experimentation; and (6) experimentation with simplified land-use controls and building regulations suitable for low-income areas.

Establishing Urban Land Management Agencies

Sound urban land management is desirable as a foundation for activities in all other sectors. Yet, the provision of adequate urban land for poverty group projects remains one of the most complex bottlenecks in the entire development process. In most parts of the developing world, with such exceptions as Tanzania and the Peoples' Republic of China, private rights rather than public interests dominate the use of urban land.

The nationalization of urban land may be a solution in some cases, but most political systems are unlikely to adopt this strategy in the

near future. Fortunately, there are many public instruments short of nationalization that are available to guide urban land development and regulate land use.

Purely negative controls over land use are unlikely to contribute in an important way to improved land management. Conventional standards and regulations are inappropriate for poverty groups. Elaborate control systems are likely to have the additional disadvantage of offering opportunities for petty corruption, many of which have an adverse impact on the poor. There is considerable potential for using taxation, leasing mechanisms, and credit to guide land use soundly.

One of the most promising approaches to managing urban land effectively is direct public intervention in the land market. An essential step in the creation of appropriate land management agencies for this purpose will be the enactment of legislation that broadly defines public purposes, establishes a payment formula which is fair and noninflationary, discourages flagrant land speculation, and has clear and simple administrative machinery.[2]

Some form of land-use control is likely to be necessary in conjunction with public participation in the land market. Land-use control systems should not treat public and private development alike in zoning and subdivision regulations. Various public agencies should participate in the adoption of policies that shape their activities to overall development plans. The specifics of such policies should appear in the form of guidelines for public action in integrated development plans. It will be desirable in many situations for an urban policy group to be the sanctioning authority for these guidelines, as well as an appellate forum for dissatisfied agencies.

Conflicts between central governmental agencies and regulating authorities could be referred to a central body for resolution. A public development reporting procedure should also be instituted. This should require every public development scheme costing up to a specified amount or of specified types to be reported to the urban policy group before construction begins in order to keep the policy group informed of progress in relation to development plans.

For the regulation of private development, enabling legislation should give state governments discretion to delegate some development control powers to appropriate planning authorities. Regulatory authorities should be free to impose some controls on an areawide basis and others on a zonal basis. Regulations should be realistic in relation to the needs and capacities of low-income households. Proper provision should be made for public participation in development control determinations. Adjustment of building construction standards to varying types of lower-cost dwellings could be made on a zonal basis.

The staggering dimensions of enforcement problems require innovative techniques; for example, focusing severe controls on

critical areas and establishing only modest controls elsewhere. Such controls might possibly be combined with the use of a task force in randomly selected areas to carry out spot checks and educate the public to the seriousness of governmental intentions.

Upgrading Court Procedures, Legal Instruments, and Security That Affects the Poor

Existing court procedures and legal instruments to which the poor are subject often are extremely slow and complex. They often encourage widespread corruption, which can be a tremendous burden on low-income households. Experiments should be undertaken to identify simplified legal instruments and to create accelerated court procedures where the poor are likely to be involved.

The police forces of many developed countries are notoriously corrupt. It is not surprising, therefore, to find the poor in developing world urban areas subjected to a variety of kinds of extortion, which add yet another factor to the many that keep them at the poverty level. As in the case of court procedures and legal instruments, experiments should be undertaken to find devices that will at least reduce such practices.

Urban Finance

Together with improvements in urban management, improvements in the financing of development are likely to be essential for sustained improvement of the condition of the poor. Unless overall fiscal and credit systems are structured appropriately, the benefits of individual projects may well be negated or reduced.

The financial instruments of special interest include taxation, the leasing of public property, and credit mechanisms.* There must be a concern with the adequacy of revenues generated in relation to the needs of the poor, the income distribution consequences of these instruments, and the impact of such instruments on the supply of goods and services essential for poverty groups. The impact of property tax and lease mechanisms on land-use patterns that affect the

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*User charges for urban services, public expenditures for specific facilities and services, and wage and price controls relevant for particular types of sectoral projects are discussed in other chapters.

poor is also important. In the use of credit instruments, the concerns should include the adequacy of credit, equity in access to credit, the impact of such instruments on the production of goods and services that are important to the poor, the impact of land-use patterns that affect the poor, the impact on the assets accessible to the poor, administrative simplicity, and financial soundness.

Finance projects that may be worthy of consideration for support will be discussed under three broad headings—fiscal reforms, the upgrading of credit mechanisms, and training.

Fiscal Reforms

In order to evaluate the impact of existing fiscal systems on the poor and identify the directions in which change may be needed, it is important to analyze the combined effects of taxes, user charges, credit, and the distribution of public expenditures. In a situation such as that of the United States, regressivity in state and local taxes may not be a cause for major concern, because the federal tax structure is rather progressive and the benefits from public expenditures constitute large percentages of the money incomes of low-income households.[3] In the developing areas, however, regressivity at the local and state level may be reinforced rather than counterbalanced by patterns of public expenditure.

Financing instruments designed to generate revenues, as well as benefit the poor, should be designed with the following points in mind.

First, the real limitations of present administrative capabilities must be recognized. These limitations can be overcome, but it takes rather explicit system design to do so. Two general rules should be followed. The total number of individuals and firms from whom taxes must be collected should be minimized (for example, turnover should be taxed at manufacturing and importing levels rather than at the retailing level). If the number of taxpayers is large, the tax should be set up to be as self-enforcing as possible, perhaps through publicity (for example, public property tax records) or through formulas for determining tax liability, which are so simple that underpayments or overpayments are crystal clear to all, or by making penalties for evasion severe and certain (for example, the foreclosure and auction of property on which taxes have not been paid).

Second, there should be a careful analysis of the specific income distribution effects of taxes. In high-income countries, considerable income redistribution takes place through the expenditure side of the fiscal system, that is, through provision of welfare, health services, education, and other income-in-kind to all or nearly all low-income households. In low-income countries, the level and coverage of such governmental programs is necessarily far more limited. If the fiscal

system as a whole is to have large income-redistributive effects, it is all the more important to emphasize taxes that redistribute income.

Third, the revenue system should have beneficial or at least neutral effects on urban land use. Direct influences include those of urban real property tax; income, wealth, and capital gains taxes applied to urban real property; and the pricing of leases on publicly owned land. Taxes on the annual or capital value of buildings tend to be passed on to tenants, if buildings are rented and vacancy rates are low, or tend to discourage investment in buildings (which may result in later shortages of space and increased rents). Taxes on the market value of land, on the other hand, will tend to be neutral with respect to land use and investment decisions (that is, they usually will not result in unsound resource allocations).

Many landowners will find the requirement for cash to pay site value taxes a stimulus to develop land sooner and more intensively than might otherwise be the case. In contrast, taxes on land measured by its rental value in current use will tend, in an environment of rising land prices, to encourage underutilization of sites.

Fourth, economic distortions caused by taxes should be minimized. Uniform and general taxes are economically less damaging than differential and selective taxes, since the former have less effect on patterns of consumption, production, and investment. Thus, a central governmental sales tax, with a uniform rate applied to a wide range of goods, is less distorting than central excise duties imposed at widely varying rates on a more limited range of goods. However, for administrative and income redistributive reasons, selective taxes may be preferred on balance, despite the distortions.

Taxes that impede mobility or raise the costs of transactions are to be avoided, because they interfere with the mechanics of the resource allocation process. Thus, taxes like the octroi in India and Pakistan and stamp duties are undesirable.

Finally, the revenue instruments used should produce significant amounts of revenue. It is not sensible to employ a large number of separate low-yield taxes to raise a given amount of money, even if the administrative capability to do so exists. Administrative costs will be high, and it is likely that the package will contain a fair number of economically unsatisfactory taxes that are palatable solely because of their low rates. However, this criterion does not warrant the elimination of existing low-yield taxes that appear to work well in accordance with the above-mentioned criteria.

Revenue Possibilities of the Central Government

Greater reliance on income and corporation taxes by central governments may make overall tax structures more progressive, that is, more strongly redistributive. The usual reasons given for the low

utilization of taxes on income include their administrative difficulty compared with indirect taxes, the small numbers of households with incomes above the poverty level against whom the tax can be levied, and the fear of reducing investment incentives for companies and rich individuals.

The first two of these reasons have some validity; the third is at least questionable, since there is some empirical evidence that very low tax rates on company profits are neither a necessary nor a sufficient condition to elicit additional private investment. Very high tax rates may be a deterrent, but the fiscal concessions and allowances that exist in many developing countries are generous by international standards.

There may be opportunities for selective central governmental increases in indirect taxation applied to goods and services primarily consumed by upper-income households. By and large, indirect taxes are easier to administer than direct taxes on income, and while selectivity does give rise to economic distortions, desirable income-redistributive effects can be achieved.

In many countries, urban areas must improve their own fiscal systems drastically if they are to mobilize funds to provide better services to their poor majorities. They often cannot rely on central or state governments already pressed to find resources for projects and programs at the national and state levels and in rural areas.

Urban Property Taxation

In many cases, a necessary reform in urban property taxation would be to extend present urban property taxes collected by municipalities to cover the entire urbanized area at a uniform rate. More realistic and accurate assessments will similarly produce additional revenue and should be encouraged.

Where state and local governments share the urban property tax, one way to secure additional revenue from the property tax each year, given increasing property values, rent levels, and local governmental costs, would be to permit local authorities to vary the tax rate itself, whether or not property is revalued frequently. Annual property tax rate changes may be relatively large in periods of inflation, but even so, they may do no more than offset the increase in property values if official valuations remain unchanged.

A more important reason for freedom to vary property tax rates is that it gives the local authorities some flexibility and fiscal autonomy. Valuations should ideally be kept current, and tax rates should vary as well. This solution is more equitable to individual property owners (all properties do not appreciate equally in value over time), and it provides flexibility to the local authority.

Another class of reforms in the property tax relates to administrative procedures. First, there is often a need for more publicity about the valuation process. Assessment guidelines need to be established in advance (which is not the case in many countries). Also, provision should be made for valuation lists to be continuously open to public inspection. This assists taxpayers in making comparisons and is also a check on the accuracy and honesty of the valuation process. Second, the property tax should become a lien against the property the day it is levied and take precedence over all other claims. This would prohibit the sale or transfer of property unless the lien was satisfied. Moreover, if property taxes were not paid within a specified period (usually three years), the local authority would take title to the property and resell it at auction.

A very desirable reform in many cases would be site value taxation that taxes only land values but not buildings. This should be on the basis of the market value of each site (its value for the highest permissible use discounted by the probability of its actually being converted to that use in the foreseeable future).

Site value taxation is neutral with regard to land use and investment decisions. Taxes on improvements and/or rental may tend to discourage new construction and even normal maintenance expenditure. They also tend to encourage withholding land from development, since idle land has no annual rental value and, therefore, no tax. The need for cash to pay the site value tax would exert pressure on owners of idle land to develop it. The site value tax, as a tax on an economic surplus, must be borne, at least in principle, by the owner of the site (whether leasehold or freehold) and not be shifted to the occupant or tenant.

A major advantage of the site value tax is that it affords an opportunity to recapture, for public sector use, increases in land values created by population growth and public investment in community facilities and utility and transport services. It could also bring land into use for low-income groups that otherwise would be kept unavailable for speculative and/or tax avoidance reasons.

Site value taxation has been in use in a number of developed countries, notably Australia, for many years. Cities in developing countries using various forms of this property tax include Kingston, Jamaica, and Mexico City.

The revenue possibilities are considerable. In one major city in a developing area, it was estimated in 1972 that if the net income from land was 10 percent per annum and if the rate of increase in land values was also 10 percent per annum (both of these rates are no doubt lower than the actual ones), then a 5 percent site value tax would recoup less than half the return from land and less than half the annual increase in land values. Even so, the tax would have raised

U.S.$30 million annually, compared with the U.S.$5 million that was collected in local and provincial property taxes in 1972.

A system of property taxation between a tax on rental value and the site value tax is the American variant of the property tax. In this system, taxes on land and buildings are levied on the basis of capital value instead of annual rental values, and the standard for determining capital value is market value.

If properly applied, this system has two advantages. First, it taxes land on the basis of its highest use instead of its actual use, thus taxing some idle land heavily. Second, newer, higher-quality buildings have a capital value that is a larger multiple of annual rents than do older, lower-quality buildings. A uniform tax rate on capital value would yield taxes that would be a higher percentage of gross annual rental value for the newer and better buildings. Thus, taxing buildings on the basis of capital value could achieve a graduated rate scheme.

The capital value taxation system does act as a deterrent to new construction, but it is a milder deterrent than a gross annual rental value taxation system, and it taxes land values more heavily. The major disadvantage is that it may require establishing a completely new valuation system and complete retraining of present assessment officials.

There are still other ways of recovering revenue from increases in land values. One is a system of betterment charges, that is, financing specific public investments, such as transportation facilities and utilities, through charges related to increased land values created by these investments. It is used in Colombia, as noted earlier, where many municipal public works are financed by valorización. Project costs (plus 15 or 20 percent to allow for financing and administrative expenses) are assessed against property owners in the immediate neighborhood of the project and redistributed among them by a formula reflecting land value increases due to the project. The procedures sometimes are fairly complex, but they are not terribly difficult to administer. It is popular among property owners, since public improvements tend to increase land values by four, five, or even ten times the costs of the projects being financed.

A municipal surcharge on personal and corporate income taxes paid by urban residents and firms to the central government might be appropriate in some cases. It has the advantage of being potentially progressive. However, correcting the substantive and administrative defects of existing income taxes of the central government should be a first priority. The introduction of an additional complication should be treated cautiously. However, if income taxes of the central government can be improved, a municipal surcharge might be considered.

This is an important and well-functioning source of local revenue in Scandinavia.

Compulsory Savings System

The use of national compulsory savings systems to finance housing was discussed in the housing chapter. The possibility of using some funds mobilized this way for other public urban investment should be considered. If the total levy was 8 percent of all salaries and wages, for example, 6 percent might be allocated to housing (in the broad sense in which that term is used in this book), and 2 percent might be made available for major investments to generate employment for low-income groups, utilities, transportation, health, and education.

Relatively large volumes of funding could be achieved in this way. The arguments for doing this include the following: (1) the levels of funding achievable; (2) the fact that an important percentage of increases in salary and wages are attributable to increases in productivity associated with urbanization; (3) the reduced risk of creating economic imbalances in resource allocation that may be associated with use of compulsory savings for a single sector; and (4) its administrative simplicity. The levy could contribute substantially to achieving greater progressivity in overall tax structures, if the percentage of wages and salaries withheld were to be directly related to salary and wage levels.

The potential disadvantages of compulsory savings sytems that were noted in the housing chapter must be kept always in mind. Moreover, if an important part of compulsory savings is used for general investment, care must be taken to be sure that investments undertaken yield public revenues, directly or indirectly. This is needed, since savings must be protected against inflation and yield interest to the involuntary contributor, as they do when used for financing housing. Combining general urban investment with interest-yielding housing finance with the largest allocation for housing could help to protect the funds used for general purposes.

Although it will be desirable to establish new forms of taxation in the long run, in many situations, it must be recognized that such reforms are likely to be difficult. In most cases, an important first step would be fuller utilization of the existing tax structure through more frequent and realistic assessments, improvements in billing procedures and collections, and the firm enforcement of sanctions against tax evasion.

Public Land Leases and Sales

Local authorities in cities where significant public lands are leased to private users have an even more direct way of recovering increases in land values. If existing ground rents are unrealistically low, as they often are, they should be negotiated. Public land should be leased in the future on the basis of leases that provide for a periodic upward revision of ground rents.

For public land that is to be sold, current practices of disposing of it at low prices, only to find that the purchaser can resell it within a relatively short period at a substantial profit, should be eliminated. However, for this to occur, local bodies must not be under severe financial pressure to sell lots off to raise funds as soon as improvements have been made. Budgetary allocations will be needed to allow them to hold out for higher prices.

Improvement and Expansion of Credit Mechanisms

The dualistic character of development in most developing countries usually extends to their financial systems. Extensive informal money markets exist outside organized capital markets. These serve the vast majority of poorer individuals and enterprises, who are not considered credit-worthy by organized financial institutions.

There is usually a wide gap in the costs of borrowing between organized and unorganized financial markets. This difference is due, in part, to usuary restrictions that often are placed on lending operations in the organized sector. It is due also to the much greater risks associated with lending outside the organized sector, the scarcity of capital for this purpose, and the high and almost riskless returns on many formal sector investments.* It is not uncommon to find commercial bank lending rates of 12 to 14 percent, together with rates of 60 to 400 percent per year, in unorganized markets.[4]

Restrictive practices by governments and financial intermediaries often result in deposit and lending rates that are out of line with the real opportunity costs of capital. These usually are approximated more closely by lending rates in the unorganized sector. Two serious problems can arise from this imbalance. First, the total amount of savings deposited with organized financial intermediaries could be greater if higher interest rates were paid on deposits. While there is some debate about the extent to which households' propensities to

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*Shareholders in savings and loan associations in some Central American countries, for example, receive annual rates of return of 30 to 40 percent.

save can be increased through interest rate incentives, there is considerable evidence that higher interest rate structures and improved institutional mechanisms can attract more household savings into liquid accounts for productive investment in development. Data from the Republic of Korea indicate that an increase in interest rates helped raise net domestic savings from 4.4 percent of GNP in 1964 to 14.3 percent of GNP in 1968.[5]

A second problem resulting from the dichotomy of interest rate structures in developing countries is the disequilibrating effect they have on the investment process. Medium- and small-scale enterprises in labor-surplus economies are often more efficient users of labor and capital than larger firms. If regulated interest rates are artificially low and the market is denied the function of credit allocation, lenders are free to adopt other credit-rationing criteria. They commonly lend for investment by larger enterprises in fixed capital equipment rather than for the working capital required by more labor-intensive enterprises.

Lending at rates less than the opportunity cost of capital encourages capital-intensive investment and a less-than-optimum allocation of a country's labor and capital resources. This is not compatible with policies that attach high priority to employment generation and a more equitable distribution of the income and capital.

Credit often is seen as a primary means of improving the productivity and incomes of the urban poor. Well-managed credit mechanisms that penetrate lower-income markets can help to mobilize additional savings mobilization at the same time as they help to make capital more readily available to smaller-scale activities that contribute to distributional goals. However, experience with credit directed toward low-income urban residents (and much more extensive experience with credit for the rural poor) has shown that successful financing programs depend on a range of complementary factors. These include the existence of real opportunities for economic gain through the adoption of credit, the recognition of such opportunities among potential credit users, the availability of technical assistance and other supporting services, economically sound credit policies, and well-managed financial institutions.

As suggested in Chapter 5, the types of credit programs necessary to service smaller-scale urban lending may require separate institutions or, at least, separate departments of existing agencies. The terms and conditions of lending must be flexible. Borrower education and technical assistance are likely to be necessary for sustained success.

Suggestions for insuring the viability of credit institutions were made in Chapter 5. The potential dangers of heavy subsidies, particularly where rates of inflation are high, were also noted in that chapter.

Participation of Private Credit Institutions

In some cases, the nationalization of commercial banks and private lending institutions will have made it relatively easy to tap these sources of credit for low-income groups. In other cases, it will be necessary to provide incentives for private institutional participation. Whether participation is mandatory or by persuasion, the basic problems associated with lending to low-income groups should be recognized, and the mechanisms established should be designed to safeguard against the pitfalls of such lending. The risks of default are high. The types and amounts of security available are limited, and in some cases (for example, land), legal procedures make it very difficult to use forms of security that are common in developed countries. The administrative costs of processing large numbers of small loans are relatively high.

The rates of return may be lower and the commitment periods longer than for many other forms of investment. (On this last point, however, it should be recognized that although rates of return on lending for such things as housing may be relatively low, other lending in which the poor are involved usually involves very high rates of return and short lending periods. It is not unknown for market women in Managua, Nicaragua, for example, to borrow U.S.$4 from moneylenders in the morning and pay back U.S.$5 in the afternoon. This represents an annual rate of interest of 9,000 percent. Market women frequently pay 10 percent per month on borrowed working capital.)

To attract private credit institutions into the low-income lending field, some of the types of project action that might be considered include assistance to those institutions in obtaining reliable information on borrower's capabilities, encouragement of mixed portfolios in which short-term high-interest loans are combined with longer-term lower-interest commitments, provision of loan guaranties, and the simplification of legal procedures.

Creation of Special-Purpose Lending Entities

It may be appropriate in some cases to set up special-purpose governmental lending institutions focused on credit for low-income groups or special divisions within existing institutions. In the early stages of experimentation, if lending mechanisms for the poor are attached to existing institutions, they should be kept separate for accounting purposes. This will avoid burdening the partner institutions with the consequences of high rates of default and the many other problems that low-income lending may entail.

This sort of arrangement has been proposed, for example, for funding low-income settlements through the House Building Finance Corporation in Karachi and the upgrading of existing low-income

settlements in San Salvador.[6] Another possibility would be to establish a private nonprofit corporation to function as a catalyst between private lenders and the poor. This has been done in the formation of the UNO in Northeast Brazil, as noted in Chapter 5.

Increasing the Credit-Worthiness of the Poor

Regardless of the sources of funding adopted, it will be desirable to increase the capacity of the poor for responsible borrowing. There are at least two complementary ways in which this might be done. One is to encourage the formation of cooperatives for borrowing. A cooperative has the advantage of being in a better position than many individuals to undertake long-term commitments. It can offer the lender a form of security that is not dependent entirely on individual members. As part of this, it can accumulate assets that are not accessible to individual members.

Second, the borrowing capacities of individuals and households can be strengthened. They can be assisted in obtaining legal title to the land they occupy. They can be given instruction and counseling in the use of credit. They can be assisted to find stable employment. Their productivity and income-earning ability can be increased through improving the basic urban services available to them (water supply, sanitation, health, and education), as suggested in other chapters.

Training

If urban management and finance are to be upgraded and expanded on a scale sufficient to deal with the growth that is foreseeable, large-scale training programs are urgently needed. Training will be needed for staff at the central and state levels if new or existing entities at those levels are to assume increased responsibility for urban programs. At the local level, the kinds of training in finance that are likely to be necessary will include such things as basic accounting, program and project budgeting, analysis of tax incidence, analyses of the impact of taxes of various types on land use, tax assessment, tax surveillance and enforcement, the pricing of public land, public borrowing procedures, and loan management.

As in the case of management training (discussed earlier), it is desirable for most training to be undertaken on-the-spot and supplemented by visits to agencies with sound financing practices and/or relevant innovations in progress. The emphasis should be on agencies in other developing areas rather than in developed countries.

COMPLEMENTARY ACTIONS THAT MAY BE NECESSARY

Improvements in overall management and finance will be of limited value if they are not accompanied by corresponding changes in planning, budgeting, financing, and implementation practices in the specialized sectors through which essential facilities and services for the urban poor are provided.

OTHER LIKELY IMPACTS

Improvements in overall urban management and finance are likely to have widespread effects, even though they are initially focused on poverty groups. Potential benefits would include increased public revenues through a fuller utilization of existing revenue sources and the efficient use of new or augmented revenue sources; improved urban services for upper- and middle-income households, as well as for low-income households; decreased costs of general urban administration relative to output; and decreased capital and operating costs for public services and facilities relative to output. Another potential benefit would be the more efficient use of urban land through tax, leasing, and credit mechanisms designed to facilitate low-income urban settlement and discourage extravagant upper-income development. These are likely to result in higher densities and more easily serviced overall land-use patterns than would otherwise be the case. In addition to using urban land more efficiently, this should help keep both the capital and operating costs of transportation, water, sanitation, power, and communications relatively low.

Another potential benefit would be the changes in the supply of essential commodities for middle- and upper-income groups. Tax and credit measures designed to increase the supply and/or reduce the prices of essential goods and services for low-income groups would produce similar benefits for the middle- and upper-income groups that consume the same items if those items are distributed through ordinary market mechanisms. Finally, another potential benefit would be increased access to credit for middle- and upper-income groups. General increases in the mobilization of savings and expansion of credit mechanisms are likely to benefit middle- and upper-income groups, as well as low-income households, unless specific blocks of credit are restricted to the poor.

Potential negative effects would include reduced capital gains from land speculation by upper- and middle-income households; reduced incomes for those previously engaged in extortion that would be eliminated by reforms (and political resistance from these groups); and higher tax payments by upper- and middle income groups. This

would result from both the income distribution and revenue-raising features of tax changes of the kinds proposed. Another potential negative effect would be higher interest rates for middle- and upper-income group. If overall credit structures were modified to facilitate access to credit by the poor, interest rates for middle- and upper-income groups might have to be increased, and the periods for which credit would be extended to them might have to be decreased to be able to maintain or improve the viability of overall credit structures. Also, there might be higher prices for nonessential items. The revenue-raising and redistributive features of tax changes of the type suggested are likely to result in substantial taxes on luxury items.

NOTES

1. Instituto Brasileiro de Administracão Municipal, Relatorio das Actividades, Exercicio de 1976 (Rio de Janeiro: IBAM, 1977), p. 5.

2. United States Agency for International Development and U.S., Department of Housing and Urban Development, Office of International Affairs, Ideas and Methods Exchange no. 69, Guidelines for Establishing and Administering Land Development Agencies in the Developing Countries (Washington, D.C.: USAID/USHUD, August 1973).

3. Dick Netzer, "Tax Structures and Their Impact on the Poor," in Financing the Metropolis: Public Policy in Urban Economics, ed. John P. Crecine (Beverly Hills, Calif.: Sage Publications, 1970), pp. 459-60.

4. International Labour Office, Sharing in Development: A Programme of Employment, Equity, and Growth for the Philippines (Geneva: Imprimeries Populaires, 1974), pp. 227-43.

5. Ibid., p. 240.

6. Karachi Development Authority, Master Plan Department, Karachi Development Plan, 1974-1985 (Karachi, Pakistan: Karachi Development Authority, 1974); Unidad de Estudios de Desarrollo Urbano y Regional (EDURES), Ministerio de Planificacion y Coordinacion del Desarrollo Economico y Social, Gobierno de la Republica de El Salvador, Program for the Integrated Improvement of Critical Metropolitan Areas in El Salvador, 3 vols. (San Salvador, El Salvador: EDURES, May 1978).

12

THE IMPORTANCE OF INTERSECTORAL LINKS

The complementary actions that are likely to be necessary for many of the projects mentioned in previous chapters suggest that projects are, implicitly or explicitly, intersectoral projects.

The purpose of the present chapter is to discuss more fully the importance of intersectoral links in project identification, project preparation, and project review or appraisal. It is intended to reduce the risk of projects in individual sectors affecting adversely, or being affected adversely by, projects or events in other sectors. It is intended also to reduce the risk of losing potentially beneficial intersectoral impacts.

RELEVANT TYPES OF LINKS

It is useful to keep in mind at least three types of links: functionally dependent links, potentially positive links, and potentially negative links.

Projects in different sectors may be directly dependent upon one another—or functionally dependent. For example, the installation of household sewer connections will require household water supplies. A technical training project depends on the existence of suitable job opportunities if it is to pay off fully; if those job opportunities do not exist or cannot be created, the training efforts may have negative results, not only because of the high opportunity costs of the resources used but also because they produce frustrated trainees.

Potentially positive links represent opportunities to optimize the net benefits of a project. For example, the labor skills created as a result of a housing project can help construction in other sectors,

strengthen self-help construction programs, and facilitate the communal maintenance of public sanitary facilities. The generation of employment for heads of households may make it possible for teenagers to receive at least minimal education, whereas without such employment, they would have had to help to support the family.

All projects are linked negatively in the sense that a commitment of resources to one withholds resources from others, except where the opportunity costs of resource allocation are zero.

Beyond this, however, there are many situations in which a project may adversely affect, or be adversely affected by, projects in other sectors. A project in transport that calls for the construction of a new route through an existing low-income settlement may require the demolition of part of the existing squatter housing stock and, thereby, reduce the effectiveness of a slum-upgrading project. The modernization of the water supply and sewerage may reduce employment opportunities in informal activities (water carrying and night soil collection).

Links among projects may be direct or indirect. The upgrading of literacy may directly improve the effectiveness of a project in personal hygiene and environmental sanitation. A shelter project may indirectly increase the effectiveness of improvements in urban management and finance by increasing the stability and sense of responsibility of low-income households, as well as their support for improved local government.

The consequences of links may be immediate and/or long term. The impact of a reduction in transportation costs on a household's ability to pay for water, sanitation, and shelter may be almost immediate. The impact of technical training on health and a generally improved life-style as a result of increased income may take several years to be felt. Both types of impact are likely to have effects that persist over long periods.

It is important to recognize both indirect and direct links in making project decisions. For example, a project in water supply and sanitation may reinforce a housing project indirectly, as well as directly, by contributing to improved health and higher land values, thus increasing household credit-worthiness. The distinction between present and future links is useful as a reminder of the lag time that should be considered in establishing expectations about the timing of benefits and/or taking precautions to avoid negative intersectoral effects.

The particular types of intersectoral links that are likely to be important in urban projects have been identified in earlier chapters in the sections dealing with the complementary actions likely to be necessary with projects in individual sectors.

POTENTIALLY IMPORTANT LINKS BETWEEN URBAN AND RURAL PROJECTS

Urban and rural development are often seen as competitive. Indeed, both national governmental and interagency priorities have fluctuated between rural and urban emphases from time to time. In some cases, rural development has been seen as a solution to problems associated with urban growth, overcrowding, and overloads on urban infrastructure.

Two points, in particular, deserve comment. First the dichotomy often drawn between urban and rural development is, in many respects, a dangerously misleading one. Urban and rural development should be seen as complementary and mutually reinforcing. Second, in most developing countries, it is not realistic to expect rural development to slow down rates of urban growth or alleviate urban growth problems significantly.

Potential Complementarities between Urban and Rural Projects

Urban development is a major source of demand for domestic rural output. In many countries where long-run agricultural export potential is limited, future rural prosperity depends largely upon urban prosperity. Rural development is, similarly, an important source of domestic demand for urban output. Many basic materials and much of the equipment necessary for rural improvements must come from urban areas. Specialized urban services are also likely to be important for increasing rural productivity.

A proposal for urban villages close to major urban areas has been made for Asia, with a specific project proposed for the Bombay Metropolitan Region.[1] A cluster of four urban villages with combined water recycling systems would support a population of the order of 30,000. Water would be distributed initially through a central facility for drinking, food preparation, and bathing and would be recycled after treatment for bathing, laundry, toilets, and so on. It has been estimated that water supply could be of the order of 200 gallons per household per day, including 100 gallons of lower-grade water for intensive gardening and fish farming. A closed cycle of sewage treatment through stabilization ponding, the production of algae, and the regeneration of the water for human use would constitute the foundation for the recycling system. Four villages would share a stabilization pond to produce algae economically for consumption by fish, chickens, and other livestock. All perishable food consumed in the community could be produced within a short distance of residences, and surpluses

could be released to markets in the nearby densely settled urban core. It has been estimated that up to 100 tons of foodstuffs per acre per year could be produced through intensive gardening, aquaculture, pisciculture, and horticulture under Bombay's climatic conditions.

Complementary urban and rural projects are likely to benefit a number of groups in addition to the urban poor. Increases in agricultural output in areas close to urban centers may decrease rural unemployment and underemployment levels. Seasonal fluctuations in employment may be reduced. Middle- and upper-income urban households are likely to benefit from the distribution of increased agricultural supplies. Public revenues could be increased as a result of increases in agricultural output, as well as by increases in urban and rural land values. Urban governmental revenues could be increased also from the sale of waste water and solid wastes for use in agriculture. Skills developed by rural workers during seasonal employment in urban areas could reduce production costs for agricultural entrepreneurs. Improvements in agricultural technology and skills could similarly result in cost reductions for urban entrepreneurs employing seasonal rural labor.

Potential Impact of Rural Investment and Development on Urban Growth

Much lip service has been paid to the desirability of decreasing the high rates of rural-urban migration in the developing countries through increased rural development. It often is argued that in order to reduce the rural-urban flow, governments need only raise rural productivity and incomes and increase the levels of rural amenities.

There are many grounds for concern with the problems associated with rapid urban growth that have prompted searches for solutions in faster rural development. There is also a deeply rooted identification with rural areas and small villages in most countries, coupled with a very understandable desire to improve the distribution of income, employment, and services for the rural population, which usually constitutes a majority of the national population. In addition, part of the motivation for attempting to limit urban growth through rural development undoubtedly has been political. Many governments fear massive and potentially volatile agglomerations of poor citizens.

There are many convincing arguments for exerting a greater effort in rural development to reduce urban problems. A more equitable distribution of income, capital, and services is espoused by most governments, at least in principal, as an inherently desirable goal. Most countries need higher levels of food production to improve nutrition, to provide a larger food surplus to support urban centers, and

to reduce dependence on imported foodstuffs. Also, increases in the productivity and incomes of rural populations would provide an expanding market for the goods and services of urban centers. Rural development programs, therefore, are a vital factor in virtually every developing nation's economic growth.

However, in most of the developing nations, it is extremely unlikely that rural development programs can significantly reduce the magnitude of urban poverty by discouraging rural-urban migration. The most recent analyses of rural-urban migration have stressed that it tends to be primarily a function of expected differences in urban and rural wage rates. In addition to higher incomes, a host of other tangible and psychological benefits are enjoyed in urban areas. The sum of wage and other differentials explains the almost universal willingness of migrants to brave the harsh conditions of the cities.

Progress in rural areas may tend to increase rather than decrease migration. Higher rural incomes, better education, and improved transportation and communication may increase rural household's aspirations and abilities to move to urban centers. These are not arguments against rural development; they are simply grounds for caution in estimating the potential for reducing urban population growth.

There are several examples in which governments' concerns with the problems of urban growth have led to attempts to control it through increased rural development. In Zambia, the Second National Development Plan targeted decreases in rural-urban migration from 4.9 to 3.4 percent for males and from 7.4 to 3.7 percent for females. In spite of an increased effort in rural development and an ambitious program for a series of intensive development zones, the growth of Lusaka and other major Zambian cities has continued at the previous high rates.

In another case, recent estimates of a 7 percent growth rate for a capital city in the Caribbean were viewed with alarm. The population of the capital has already resulted in very high levels of unemployment and underemployment and extreme overloads on urban infrastructure. It was hoped that planned programs for rural development could reduce the pressures on the capital. Much of this hope was based on a view that overlooked the severity of current rural overpopulation and underemployment. It has been estimated that there is a 600 percent surplus of manpower in rural areas. Opportunities for rural development exist, but it is unlikely that more than a fraction of the surplus manpower can be absorbed, even with the most labor-intensive technologies. As rural incomes rise and better transportation networks are developed, migration to the cities is likely to increase rather than decrease.

If there is a major exception to the general rule which indicates that rural development programs are unlikely to be very effective in limiting urban growth, it may be the People's Republic of China. The Chinese government has experimented with various rustication programs, which have attempted to keep peasants in rural areas and relocate urban bureaucrats and youth in the countryside. Programs have involved both temporary and permanent resettlements. Checkpoints have been established to discourage blind migration to cities. In addition, a series of less direct controls and incentives have been used. Education and food rationing have been conditioned upon individual willingness to live in rural areas. China is also experimenting with new forms of urban development, which attempt to minimize the social distinction individuals feel between urban and rural space. In the design of urban service centers, great importance is given to serving agrarian as well as urban needs.

The Chinese model is interesting in a number of respects, but it may be of limited applicability under the political and social conditions prevailing in other developing countries. The willingness to work in rural occupations and the reverence for rural life in China is a result not only of intensive political education but also of a long history of an intense symbiotic relationship between the cities and the countryside. The conflicts between rural masses and urban-based elites encountered in the West have never been as pervasive in China. In addition, very few of the other developing countries are able or eager to adopt the policies and methods of the People's Republic of China. Some leaders hesitate to use direct controls and coercion, which they associate with antidemocratic policies and the colonialism that they have only recently discarded. Otherse are confronted with entrenched elites that must be recognized if at least short-run stability is to be maintained.

A number of governments have established policies to decentralize urban growth away from primate cities into smaller centers. Evidence as to whether urban infrastructure, services, employment, and housing can be provided more efficiently in large or small cities is far from clear. Ultimately, decentralization decisions are usually political, as well as economic, and reflect a governmental desire to provide a more equitable regional distribution of the fruits of development. Such strategies may limit short-term economic growth, but they may also bring out greater economic efficiency in the long run. The larger, more advanced developing countries, whose resources are relatively abundant and geographically dispersed, may be able to achieve decentralized urban growth that is both economically and socially sound fairly quickly.

NOTES

1. Richard L. Meier, Resource Conserving Urbanism in South Asia IV: The Development of Greater Bombay, Working Paper, no. 154 (Berkeley: Institute of Urban and Regional Development, University of California, July 1971), pp. 59-61.

III

APPENDIX: ILLUSTRATIVE PROJECT DATA

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INTRODUCTION

It is hoped that the preliminary and obviously incomplete material presented in the preceding chapters will encourage at least some readers who are staff members of agencies grappling with urban problems in the field to develop their own field books with cumulative material on individual projects that will serve as a continually evolving reference for subsequent project work.

The types of statistical data and qualitative information assembled will depend upon the interests of the individual. They might be selected to complement, rather than provide a substitute for, the more complex and detailed kinds of information called for in the various manuals and memoranda that individual agencies use in project identification, project preparation, appraisal, and evaluation. *

The following set of hypothetical data may assist in the assembly of actual case materials. The format used is intentionally a flexible one—to allow for the variety of types of information that will be relevant and available in individual countries and to facilitate the use of the materials as inputs for the variety of formats used by various national and international agencies in the assemblages of information they require for project identification, project preparation, appraisal, and evaluation. †

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*See, for example, United States Agency for International Development, The Logical Framework—Modifications Based on Experience (Washington, D. C.: USAID, November 1973); United States Agency for International Development, Handbook 3, Project Assistance (Washington, D. C.: USAID, September 1975; and United States Agency for International Development, Evaluation Handbook, 2d ed. (Washington, D. C.: USAID, May 1974).

†The illustrative material in this appendix is extracted from Planning and Development Collaborative International, Guidelines for Formulating Projects to Benefit the Urban Poor in the Developing Countries (Washington, D. C.: USAID, 1976), on which the present work is based.

ILLUSTRATIVE CASE STUDY

GROUP: Housing
SUB GROUP: New low-income settlement

REFERENCE:

Project Name: Settlement Project 'X'
Year of Project Identification: 1971
Year of Identification of Project Implementation: 1971
Year of Completion of Project Implementation: 1975 (but not fully functional—see project schedule)
Region: I
Country: A
Urban Area: B

I: Country Data: 1976*
Area: 806,000 sq. km.

Population:	Total	Urban	Non-urban
Size	70 million	17 million	53 million
Annual compound growth 1971-1976	3.3%	5%	2.8%
Crude birth rate (per 1,000)	47	•	•
Crude death rate (per 1,000)	14	•	•
Infant mortality (per 1,000 live births)	113	•	•
Access to piped water (% of population):	11	30	5
Nutrition:			
Calorie intake as % of requirement	80	75	85
Per capita daily protein intake	40 gm.	45 gm.	38.4 gm.

Health:			
Population per physician	4,600	2,000	7,900
Population per hospital bed	2,000	800	3,850
Education:			
Adult literacy rate (%)	40	55	35
Primary school enrollment (%)	50	60	47
Access to electricity:			
Percent of population	13	45	3
Income distribution:			
Percentage of households at monthly income levels:			
Less than $30	75	50	83
$30-49	18	35	12
$50-99	5	10	4
$100-199	1	3	0.7
$200 and more	1	2	0.3
Per capita GDP:			
Output, labor force and productivity (current factor costs):			

	Value added		Labor force		Value added per worker	
	Millions $	%	Million $	%	$	% of average
Agriculture	1,814	36	11.2	56	162	64
Industry	1,109	22	3.6	18	308	122

*• Indicates not available.

	Value added		Labor force		Value added per worker	
	Millions $	%	Million $	%	$	% of average
Services	2,117	42	4.4.	22	481	191
Unallocated	—	—	0.8	4	—	—
Total/Average	5,040	100	20.0	100	252	100

Government finance (central and state consolidated):

	Million $	% of GDP
Current receipts	756	15
Current expenditure	857	17
Current surplus (deficit)	(-101)	(-2)
Capital expenditure	428	8.5
Extend assistance	252	5.0

Balance of payments:

Exports of goods, NFS	$650 million
Imports of goods, NFS	1,000 million
Revenue gap	$350 million

External debt:

Public debt, incl. guaranteed	$3,800 million
Debt service ratio*	17%

Major Exports:	%	Major Imports:	%
Raw cotton	17	Consumer goods	
Cotton yarn	18	food	24
Cotton cloth	14	non-food	5

Rice	11
Leather	5
All other	35
TOTAL	100

Raw material for consumer goods	
petroleum	6
animal & veg. oil	4
fertilizer	5
other	16
Raw material for capital goods	
wood	1.0
coal & coke	0.4
billets of ingots	1.6
other	7.0
Capital goods	
Machinery	14.3
Non-machinery & transport	15.7
TOTAL	100.0

II: Data for the Urban Area in Which Project Is Located: 1976

Function: Port and industrial center

Population:

Size	4.5 million
Compound annual growth rate 1971-1976:	5.5%
Natural increase	2.8%
In-migration	2.7%
Average household size	5.2 persons

*Ratio of debt service to exports of goods and non-factor services plus workers remittances.

Access to piped water (% of population):	35%
Nutrition:	
Calorie intake as % of requirement	85%
Per capita daily protein intake	50 gm.
Health:	
Population per physician	1,000
Population per hospital bed	650
Education:	
Adult literacy rate (%)	62%
Primary school enrollment (% of age group)	70%
Access to electricity (% of population):	50%
Per capita urban product:	$172
Income distribution:	
Percentage of households at monthly income levels:	%
Less than $30	45
30-49	35
50-99	14
100-199	4
200 and more	2
TOTAL	100

Output, labor force and productivity (non-agricultural) (current factor costs):

	Value added		Labor force		Value added per worker	
	Million $	%	Thousands	%	$	% of average
Manufacturing & mining:						
Large-scale	237	33	202	16.2	1,173	203

Small-scale	34	6	150	12.0	226	39
Construction	85	12	72	5.7	1,180	205
Public utilities	16	2	16	1.3	1,000	173
Trade	120	17	214	17.1	560	97
Banking, insurance & real estate	45	6	20	1.6	2,250	390
Transportation	89	12	126	10.1	706	122
Services (formal & informal)	98	14	450	36.0	217	38
TOTAL	722	100	1,250	100.0	577	100

Local government finances:

Current receipts	$19.3 million
Current expenditures	19.8 million
Current surplus (deficit)	0.5 million
Capital expenditure	6.2 million
Capital expenditure per capita	2.5 million
Intergovernmental loans & grants	3.0 million

III: Project Information:

1. Goals:

a. Current consumption goals:

—Improvements in the availability and quality of shelter and basic services and improvements in environmental quality.

—Increased levels of consumption for other essential goods and services—food, clothing, education and health—as a result of higher incomes and access to credit and as a result of higher productivity and lower costs in industries benefiting from improvements in housing and related urban services.

— Increases in environmental satisfaction as a result of the upgrading achieved through improved levels of housing and support services.

b. Capital accumulation:

—Increased personal capacity for future employment and the enjoyment of future consumption—as a result of improved health and the higher motivation associated with improvements in housing and the achievement of home ownership or secure tenancy.

—Increased property ownership and secure tenancy for low-income households—and increased property values (resulting from shelter and environmental upgrading and/or increased incomes and demand for property in low-income settlement areas).

—Greater access to formal credit for low-income households.

2. Intermediate Project Purposes:

—Provision of employment for the labor force in the project population—partly through supporting the creation of employment opportunities in the project area and partly through high accessibility to nearby job opportunities.

—As part of the support for the generation of employment, provision of serviced plots for manufacturing and trade and service enterprises, together with technical assistance and credit for small-scale entrepreneurs who would otherwise have difficulty in gaining access to adequate credit.

—Provision of space and facilities for proper food distribution and enforcement of public health regulations to encourage sound food distribution practices.

—Provision of opportunities for acquiring titles to serviced residential plots to at least two-thirds of project households; as part of this, simplification of procedures for obtaining titles.

—Delivery of adequate levels of water supply and sanitation to the project population.

—Provision of adequate drainage for the project area.

—Provision of opportunities for use of electricity by all individual households.

—Provision of good public transportation access to other parts of the urban area and, in particular, to off-site job opportunities.

—Provision of adequate preventive medicine and simple curative medical services for the project population.

—Provision of literacy programs and adult education services to the project population.

—Provision of vocational training linked to the actual demand for labor—in collaboration with stable medium- and large-scale enterprises.
—Provision of primary education services for 100 percent of the primary school age population in the project.
—Provision of household counselling services to encourage sound nutrition, family planning and sound household budgeting.
—Provision of community development services to encourage community organization for cooperative development and maintenance in the project, to encourage the development of a sense of civic responsibility in the project population and to facilitate sustained participation in decision-making affecting the well-being of the project population.
—Provision of access to credit for households who would otherwise have difficulty in gaining access to adequate credit.
—Legal provision for plot owners to rent space to tenants on the plots they occupy—to increase opportunities for secure tenancy and to increase the incomes and credit-worthiness of low-income landowners.
—Provision of technical assistance in house building and maintenance to project households.
—Provision of adequate recreation space designed to reflect actual behavior patterns of the project population.
—Provision of adequate serviced plots for religious and other essential social activities.
—Provision of institutional arrangements for the sustained management of public facilities and services in the project area and, as part of this, provision for coordination among the various public agencies concerned at each level of government.

3. Basic Project Elements:

Project Element	Planned	Actual	Comment/Explanation
Population:	37,000	26,400 in 1976; potential is 33,000	Part of original site transferred to nearby squatter community for institutional uses as result of political pressure.

Project Element	Planned	Actual	Comment/Explanation
			Revised layout neglected some topographic features and resulted in some areas being unbuildable.
Land use (acres):			
Residential	114	93	See comments on population, above.
Commercial	5	5	
Industrial	7	—	Subsequent desire for higher (in some cases unnecessarily high) standards for streets and park space.
Parks	2	10	
Institutional	13	17	
Streets & plazas	56	76	
Other	6	—	
TOTAL	201	201	Industrial space lost as result of insistance on higher standards for other uses. Changes affected expected cash flow detrimentally.

Residential Plot Sizes:

Type	Unit size (sq. yds.)	% of total res. area	% of total res. area
Open	80	36.1	3

Subsequent desire for higher standards led to substantial upgrading of mix of plot sizes and infrastructure standards.

Open	120	5.8	9
Open	240	9.1	10
Open	400	4.1	6
Flats	20	1.0	6
Utility	80	22.4	44
Utility	120	21.5	22
		100.0	100

Water Supply: Percent of households with individual connections	80%	100%	Subsequent desire for higher standards. Cost of intial connection absorbed in basic housing loans.
Sewerage: Percent of households with individual waterborne connections	60%	100%	Subsequent desire for higher standards. Cost of initial connection absorbed in basic housing loan.
Treatment—conventional	Stabilization ponding.		Made substantial reductions in capital operating costs for sewerage possible. Used results of experimentation by local university.
Drainage:	60% of area.	100% of area.	Subsequent desire for higher standards.

Project Element	Planned	Actual	Comments/Explanation
Electricity: Percent of households with individual connections	100%	100%	Cost of initial connection absorbed in basic housing loan.
Food Markets:	Provision of main market and small local market space. Enforcement of public health regulations.	Serviced and covered space provided. Rents being collected. Enforcement of regulations achieved.	Locations of markets well-related to pedestrian and bus movement; profitability facilitates public management.
Transportation:	Explicit provision for substantial pedestrian movement. Provision for traditional modes in layout of streets and lanes. Provision of bus services. Provision for commercial manufacturing, social & other non-transport use of some street and lane space.	Arterial road and local street widths and construction standards increased substantially because of local engineering traditions & contracting procedures.	Increases in standards unnecessary from a transport point of view and resulted in loss of residential land, loss of project revenue potential and waste of construction materials.
Health Services:	Emphasis on preventive medicine & simple curative services.	Same.	

	One health center with a maternity wing.	Same. Utilized bilateral funding assistance.	
Education Services:	Literacy program.	Same.	Utilized national T. V. system very efficiently.
	Vocational training program.	Not yet established.	Difficult to link government services with private sector activities.
	6 primary schools operating on two shifts. 4 secondary schools operating on two shifts.	4 schools; utilized bilateral funding assistance. 4 schools; utilized bilateral funding assistance.	Visibility and promise of project attracted bilateral assistance.
Community Development Services:	One community center with integrated counseling, employment service, credit service & community organization programs.	Facility built but used for only project management & community organization programs as yet. Utilized bilateral funding assistance.	Use of local branches of commercial banks for credit judged superior. Difficult to staff employment service program. Visibility & promise of attracted bilateral assistance.

Project Element	Planned	Actual	Comments/Explanation
Credit & Technical Assistance for Low-Income Entrepreneurs:		Not yet established.	Dependent on state agency; limited resources at state level have led to delays.
Credit for Households:		Partially established; loan terms more severe than planned.	Still dependent on commercial banks. Institutional difficulties have resulted in national housing bank not yet being involved. Substantial percentage of borrowing through trade unions & cooperatives which are accessible to only some of the project's households. Consequent lowering of construction standards for individually-financed units although plot service standards remain high; defaults in payments for serviced plots now 20%.

Legal Provision for Households Owning Plots They Occupy to Rent Part of Space to Other Households:		20% of households renting space to others; 50% rental expected within 2 more years.	Expected desirability of this provision has been substantiated.
Provision of Technical Assistance in Housebuilding:		Not yet developed; some innovative prototypes built but households prefer to use own initiative. International assistance being sought.	Local institutional capacity limited and still too "research"-oriented.
Recreation Space:	See Land Use	See Land Use	See Land Use
Serviced Plots for Religious & Other Essential Social Activities:	See Land Use	See Land Use	See Land Use
Institutional Program for Sustained Management of Public Facilities and Services:		Not yet fully established.	Local government capacity limited. Not adequate in-

Project Element	Planned	Actual	Comments/Explanation
			volvement of local government in initial planning, financing & management preparations. Capacities of relevant state agencies limited & budget demands from rural areas & other urban centers in the state make project support very difficult. Burden of management falling on capital development agency & project residents.

4. Project Schedule

Expected	Actual	Comments/Explanation
Year 1:		
Trunk infrastructure complete.	Completed.	
15% of plots fully serviced.	Completed.	
10% of residential plots occupied.	Achieved.	
10% of commercial space occupied.	Achieved.	
10% of industrial space occupied.	None.	Industrial site deleted because of higher residential, infrastructure & open space standards.

One local food market built & occupied.	Completed.	
Health center built & functioning.	Completed.	
One primary school built & functioning.	Completed.	
Credit system for households established.	Not yet established.	Institutional support at national level not achieved.
Year 2:		
40 % of plots fully serviced.	30% serviced.	Inflation, increasing costs & failure to mobilize full funding.
25 % of residential plots occupied.	20% occupied.	Costs higher than expected & credit not yet available.
25% of commercial space occupied.	20% occupied.	Reduced demand for goods & services as a result of slower residential growth.
20% of industrial space occupied.	Deleted.	
Part of main market built & functioning.	Achieved.	
One secondary school built & functioning.	Achieved.	
Bus service initiated.	Achieved.	
Community center established.	Achieved.	
Credit & technical assistance for low-income entrepreneurs established.	Not yet established.	Limited institutional capacity at the state level.
Technical assistance in housebuilding established.	Only prototypes built.	Limited institutional capacity & excessive "research" orientation.
One park space established & used.	Achieved.	
Serviced plots for religious & other essential social services beginning to be utilized.	Achieved.	

Expected	Actual	Comments/Explanation
Local government assumes responsibility for continued management of facilities & services.	Not achieved.	Limited local government resources & insufficient involvement of local government in initial decisions on planning, finance & management.
Year 3:		
100% of plots fully serviced.	80%	Continuing high costs & increasing difficulty in obtaining domestic funding.
60% of residential plots occupied.	50%	Costs higher than anticipated. Credit system not fully established.
60% of commercial space occupied.	50%	Growth in consumer demand slower than expected.
40% of industrial space occupied.	Deleted.	
Two local food markets built & functioning.	Achieved.	
Continued development of main market.	Achieved.	
Two primary schools built & functioning.	Achieved.	
Two secondary schools built & functioning.	Achieved.	
Continuing development of park spaces.	Achieved.	
Year 4:		
80% of residential plots occupied.	60%	Same comment as for Year 3.
15% plots have tenants as well as owners occupying them.	Achieved.	
80% commercial space occupied.	60%	Same comment as for Year 3.
60% industrial space occupied.	Deleted.	
Construction of main market complete.	Achieved.	Not fully occupied because level of consumer demand lower than expected.

Three primary schools built & functioning.	Three built but only two fully staffed.	Demand not fully developed; staffing shortages.
Three secondary schools built & functioning.	Three built but only two fully staffed.	Same comment as for primary schools.
Year 5:		
100% of residential plots occupied.	80%	Same comment as for Year 3. This leading to increasingly severe cash flow problems.
30% plots have tenants as well as owners occupying them.	Achieved	
100% of commercial plots occupied.	80%	Same comment as for Year 3.
100% industrial space occupied.	Deleted.	
Main market fully functional	Construction complete but only 80% occupancy.	Growth in consumer demand slower than expected.
Four primary schools functioning.	Four built; three functioning.	Same comment as for Year 4.
Four secondary schools functioning.	Four built; three functioning.	Same comment as for Year 4.

5. Specific Poverty Groups Benefited.

Monthly Household Incomes	Percentage of Benefited Households: Expected	Actual	Comments/Explanation
			Substantial upward shift in income distribution of project population resulted from increased costs caused by price

Monthly Household Incomes	Percentage of Benefited Households: Expected	Percentage of Benefited Households: Actual	Comments/Explanation
			increases & substantial upward revision of project standards.
$0-29	22.7	0.0	This means that the lower-income target groups originally intended to benefit will not do so, even though the percentage of the total urban population they constitute has not changed markedly.
30-49	52.5	2.9	
50-99	20.7	70.8	
100-199	3.1	22.0	
200 & more	1.0	4.3	
	100.0	100.0	Standards in projects with similar purposes & goals will therefore have to be reduced markedly if those projects are to benefit the range of target groups intended originally.

Percentage of all metropolitan households at or below the poverty level who are benefited: 2%. *

6. Impacts on Poverty Groups

Expected	Actual	Comments/Explanation
a. Benefits		General Comment: Income levels benefited were generally higher than those targeted because project standards & costs were generally higher than originally planned.
Current consumption:		
Consumption of an average of at least 25 gallons of safe potable water per person per day by the target population groups.	Consumption of an average of 35 gallons per capita per day.	See general comment.
	Improved consumption was achieved primarily by higher income groups than those originally targeted.	Unnecessarily high consumption & wastage. Meters were to be installed

		but were not. Water rate was levied on property value instead.
Consumption of food with an average protein content of 60 gm. per person per day & with 100% of the calorie & vitamin & mineral requirements for sound nutrition.	Achieved 80% of project households but income levels benefited were higher than those targeted.	See general comment. Achievement of less than 100% impact largely because of personal consumption preferences favoring consumer durables & semi-durables & because quality of food supply did not improve significantly during the period.
Use of sanitary waterborne sewerage by 60% of the target households and pit latrines & communal cesspools by the rest.	Use of sanitary waterborne sewerage achieved by all project households but income groups were higher than those targeted.	See general comment. Unnecessarily high level of achievement and consequent waste of resources.
Use of electricity for lighting by all households.	Achieved, but by income groups higher than those targeted.	See general comment.
Enjoyment of markedly improved shelter in the targeted population.	Achieved, but by income groups higher than those targeted.	See general comment.
Increased & improved social interaction in the targeted population (increased in terms of social transactions of various kinds & reductions in conflict).	Achieved, but by income groups higher than those targeted.	See general comment.
Increased enjoyment of the immediate physical environment	Partly achieved, but by income groups higher than those targeted.	See general comment. Achievement was less than originally

*The World Bank is including this measure increasingly in its project analyses and is maintaining data on the poverty levels relevant for each country.

Expected	Actual	Comments/Explanation
by members of the targeted population (measured by observed use of physical facilities & results of interviews).		expected because physical layout was changed from innovative layout to more conventional layout compatible with previous site engineering practices.
Increased recreational activity in members of targeted population group.	Achieved, but by income groups higher than those targeted.	See general comment.
Increased participation of members of targeted population group in decisions affecting their welfare.	Achieved, but by income groups higher than those targeted.	See general comment. Lower income groups were additionally disadvantaged because of aggressive organization & initiative of higher income groups.
Capital Accumulation:		
Improved health of targeted population (measured by incidence of specified illnesses & diseases & periods of inactivity caused by those illnesses & diseases).	Achieved, but by generally higher income groups than those targeted.	See general comment.
Increases in skills, knowledge & sensibilities of targeted population.	Achieved, but by generally higher income groups than those targeted.	See general comment.
Increased household savings in targeted population.	Achieved, but by generally higher income groups than those targeted.	See general comment.
Increased use of sound credit for essential purposes by targeted households.	Achieved, but by generally higher income groups than those targeted.	See general comment.

Increased residential property ownership & secure tenancy rights in targeted households.	Achieved, but by generally higher income groups than those targeted.	See general comment.
Increased ownership of commercial capital equipment by low-income entrepreneurs in the targeted population.	Achieved, but by generally higher income groups than those targeted.	See general comment.
Increases in the value of land owned by members of the targeted population in the project area.	Achieved, but by generally higher income groups than those targeted.	See general comment.
Reduced Risk:		
Reduced economic risk for households in the targeted population—measured by income & essential expenditure flows over a "typical year."	Risks reduced, but in general for higher income groups than those originally targeted.	See general comment.
Reduced physical risk for households in the targeted population—measured by incidence & costs of accidents & property damage from environmental hazards.	Risks reduced, but in general for higher income groups than those originally targeted.	See general comment.
Reduced social risk—measured by incidence & types of social conflict & results of interview.	Risks reduced, but in general for higher income groups than those originally targeted.	See general comment.

Expected	Actual	Comments/Explanation
b. Disbenefits		
Increased expenditures on essential facilities & services by households in the targeted population.	Increased expenditures & tax payments incurred but offset by project benefits; increases were primarily for higher income groups than those originally targeted. Disbenefits Not Foreseen: Increased political pressure from nearby squatters at income levels similar to those originally targeted—because they were denied participation & because highly visible public project clearly was benefiting higher income groups. Visibility of relatively high standards in first project is making it politically harder to achieve standards appropriate for original target groups in subsequent projects. Weakened cash flow as a result of higher standards and increased costs together with failure to establish mechanisms for sound financing are making it difficult to	This helped the smaller-than-expected numbers of low-income households who were able to participate in the project because pressures for payment were reduced for them & some defaults could be tolerated.

get high-level political support for continuation of low-income settlement program with similar projects.

Downgrading of innovations in physical design, coupled with inability to engage local government fully in sustained management, is resulting in less-than-expected maintenance of public & semi-public spaces and facilities, which may bring whole concept into disrepute.

Inability to engage local government fully in sustained management is resulting in deterioration which is affecting the lowest-income groups in the project most adversely.

7. Other Impacts*

Expected	Actual	Comments/Explanations
Benefits		
Contribution to increased Gross Local Product.	Achieved.	

*Impacts on groups other than the urban poor.

Expected	Actual	Comments/Explanations
Increased income for middle and upper-income groups associated with the construction industry.	Achieved.	Higher impact than expected because of higher standards and costs.
Increased tax revenues—as a result of increases in land values and incomes.	Partly achieved.	Not fully achieved because necessary upgrading of assessment and collection has not yet occurred.
Increased general social and economic stability—as a result of improved health, improved consumption and increased control of capital assets by the target groups.	Not changed significantly.	This single project is too limited to have marked impact on general stability; it is also benefiting higher income groups than those originally expected.
Strengthened capital markets through the increased mobilization of capital for shelter.	Not changed significantly.	This single project is too limited to have a significant impact.
Higher savings rates in the economy through increased levels of savings and increased investment in housing.	Achieved to a very limited extent—for the households and enterprises in or otherwise benefiting from the project.	This single project is too limited to have a significant impact.
Reduced health hazards for the larger urban population as a result of the improved health of the target groups.	Cannot yet be measured.	This single project is too limited to have a significant impact.
General environmental upgrading.	Not changed markedly but some autonomous upgrading has oc-	This single project is too limited to have a significant impact.

	curred in neighboring areas as part of a "bandwagon effect."	
Disbenefits		
Reduced housing supply for middle and upper-income groups because of capacity constraints in the housing industry and an increased emphasis on low-income settlement.	Not changed significantly.	This single project is too limited to have a marked impact.
Reduced construction in non-housing sectors because of capacity constraints in the construction industry.	Not changed significantly.	This single project is too limited to have a marked impact.
Reduced short-term economic growth because of lower rates of return on investment in housing compared to investment in other sectors.	Not changed significantly.	This single project is too limited to have a marked impact.
	Disbenefits Not Anticipated	
	Increased burden on local finances because of cash flow problems associated with higher standards and costs.	
	Decreased capacity of planning and implementing agency's ability to undertake other types of work—be-	

Expected	Actual	Comments/Explanation
	cause implications of project were not fully realized and staff was not augmented to service it properly.	

8. Cost Benefit Analysis*

Conditions Assumed	Internal Rate of Return
1. Simple IRR analysis without shadow prices	14%
2. With shadow pricing for labor	16%
3. With benefits reduced 20%	11%

8. Policy Implications

Expected	Actual	Comments/Explanation
Policy support at all levels for giving high priority to lower-income groups & for adoption of standards which are relatively low enough to achieve substantial benefits for those lower-income groups within the severe constraints improved by current public revenues.	This support not yet established.	Result has been that standards adopted have been too high to reach a large proportion of the original target groups who are most in need of support.
Need for policy endorsement at each level of government for	No active endorsement—in particular, no endorsement resulting in	Lack of active endorsement has resulted in underutilization of self-

strategy of supporting private sector initiative & self-help capacities in all aspects of project implementation.	funding of technical assistance & mobilization of credit to reinforce self-help capacities.	help potential, but there has been no active interference with self-help activity.
Policy support at all levels for keeping the subsidy component of such projects as low as possible.	Not established.	Has resulted in excessively high standards & costs which call for subsidies if lower-income groups are to be reached; but public resources are not sufficient for subsidies on an adequate scale.
Policy support at all levels for using technologies that utilize local materials & skills as fully as possible.	No active support; but not active opposition either.	Result has been unnecessary use of some imported materials and relatively high-cost materials.
Increases in employment opportunities productivity generally to help to raise the incomes of the poor so that they can afford improved shelter.	Occurring to a limited extent.	Limited scale of general improvement has reinforced the tendency of the project to benefit higher income groups than those originally targeted.
Land development programs to limit the effects of land specula-	The project itself constitutes part of such a program but no	Failure to establish an areawide program of this kind is making it

*Formal cost-benefit analysis may be difficult in low-income settlement projects because of complex land tenure conditions and other factors. The figures presented here reflect only a rudimentary sensitivity analysis and do not take into account explicitly the distributional features of the project. For a recent approach which does attempt to recognize the distributional characteristics of projects, see Lyn Squire and Herman G. Van der Tak, Economic Analysis of Projects (Baltimore and London: The Johns Hopkins University Press, 1975).

Expected	Actual	Comments/Explanation
tion & keep land costs down for low-income groups.	such overall program has yet been established in the urban area.	difficult to acquire sites suitable for similar projects. A number of appropriate sites are being pre-empted for private speculation.
Provision of secure land tenure or some reasonable guarantee of tenure as an incentive for investment.	Not yet approved.	Difficulties in providing clear titles to land have been among the causes of slower-than-expected occupancy and difficulties in engaging support of private lenders.
Development of off-site infrastructure to serve such projects directly & to encourage the development of efficient land use patterns which help to make land for such projects readily available.	Off-site infrastructure for the project has been developed but no areawide infrastructure program has yet been adopted to support similar projects.	See comment on land development programs, above.*
Projects to support the development and improved use of local materials throughout the construction industry.	Not yet established.	This has been one of the causes of the continuing use of conventional technologies and unnecessarily high standards.

IV: General Comments

A. Overall Evaluation

In spite of its shortcomings the project is a considerable success relative to previous efforts in low-income, or relatively low-income, settlement. The decisions made to upgrade standards were probably needed to get the political support necessary to take the risks associated with project implementation.

B. Preconditions for the Sustained Success of Projects of this Type

1) The existence of a strong institutional base and project leadership at a senior administrative level—the latter of which was present in this case and made it possible to undertake implementation in spite of the absence of some other desirable preconditions.
2) Strong policy support at all levels of government for an emphasis on projects for the urban poor. The absence of such policy support has not made it impossible to undertake this first project but will make it almost impossible to expand it into a continuing program for low-income settlement if policies do not change.
3) Land development policies and regulations and areawide infrastructure programs designed to encourage efficient land use, curb speculation and make sites available for projects of this type.
4) Provision for secure title and tenancy rights.
5) Mobilization of credit on a large scale.
6) Early and full engagement of the local and other government entities needed for effective planning, initial implementation and sustained project management.

   As part of this, policy support for standards realistically low enough to make it possible for such projects to be largely internally financed.
7) Willingness and ability to mobilize and train the substantial staff groups needed for proper project planning, implementation and sustained management—and a willingness to give these staff groups high enough status to attract skilled staff and facilitate their collaboration with the senior staff members of other agencies.
8) The incorporation or simultaneous undertaking of programs designed to increase employment opportunities and incomes for the urban poor to enable them to be largely responsible for achieving project viability.

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