Industrial Growth and Urban Land Requirements in East Pakistan

by

JOHN C. EDDISON*

INTRODUCTION

East Pakistan is currently in the early stages of a major, long-term programme of industrial development. This programme, which has been substantially speeded up under the Second Five Year Plan, is to be further accelerated under the Third Plan. Whether or not such an increased rate of development can be sustained will depend on whether critical bottlenecks in the supply of the basic ingredients of industrial growth can be eliminated or prevented from occurring. One such bottleneck, which is already slowing down industrial expansion and which could completely hobble it under the Third Plan, is the inadequate supply of suitable industrial land.

This scarcity of good land for locating new mills and factories is an aspect of the larger problem of the inadequacy of urban land for commercial, residential, public utility and other important uses in almost every part of the province where economic growth is taking place. This problem, which is already quite serious, can be expected to become progressively worse with rising levels of investment and employment.

II. INDUSTRIALIZATION AND URBAN GROWTH

East Pakistan is now committed to an expanding programme of industrial development. Although the beginning of this programme may be traced back to 1947, progress in diversifying the provincial economy away from its overwhelming dependence on agriculture was relatively slow in the years immediately following Independence and in the decade of the 1950s. While valuable pioneering work was done in such industries as jute, paper and fertilizer, the province has lagged considerably behind its western counterpart in overall industrial growth, especially in the private sector. Although precise figures on industrial investment in East Pakistan during the First Five Year Plan are not obtainable, the total amount of such investment in the 1955-60 period is believed to have been of the order of Rs. 60 crore: Rs. 38 crore in the public sector and an estimated Rs. 22 crore in the private sector. The limited effect of this investment in changing the character of the provincial economy may be seen from the

* The author was formerly a member of the Harvard Advisory Group in the Planning Commission of Pakistan.

1961-Census figures. These figures show that in January 1961, 95 per cent of the population was still classified as rural and only 5 per cent as urban, and 85.3 per cent of the civil labour-force obtained its livelihood from agriculture as against 14.7 per cent which derived its livelihood from all other occupations[1].

Under the Second Five Year Plan, an approximate tripling of industrial investment over the levels obtaining in the First Plan has been projected. The Second Plan calls for an expenditure of Rs. 87 crore in the public and semi-public sectors and of Rs. 100 crore in the private sector, making for a total investment of Rs. 187 crore in industries[2]. It is estimated that in the first two years of the Second Plan about Rs. 54 crore, or 29 per cent of the five-year total, have been invested, leaving a balance of Rs. 133 crore for the last three years of the Plan[3]. Despite this slow phasing and relatively low level of expenditures in 1960/61 and 1961/62, the problem of acquiring suitable land for establishing new industries has already become acute.

Industrialization is essentially an urban phenomenon. Most mills tend to cluster together in and around towns and cities where they can operate to best advantage. This grouping of factories generates profitable opportunities for many other economic activities and generally results in sustained urban expansion. Hence, when a nation or province embarks on a programme of industrialization, it simultaneously commits itself to the process of urban growth. This growth may be haphazard or orderly, concentrated in a few giant metropolises or distributed over a considerable number of towns and cities. It may become a source of constant unrest and dissatisfaction or it may be a means of developing a new and prosperous economic structure. The decision of the government to undertake a major industrialization effort in East Pakistan has committed the province to a transformation from a rural to a semi-urban economy. The implications of this transformation do not yet appear to have been adequately realized.

As indicated previously, East Pakistan is today overwhelmingly a village-based economy with about 95 per cent of the people living in villages of less than 5,000 persons each. By contrast, the proportion of persons living in rural areas in West Pakistan is around 77 per cent. In most industrialized countries it is below 30 per cent. If the proportion of city dwellers in East Pakistan were to rise to only 10 per cent of the provincial population by the end of the third-

---

[1] Census Commission, Government of Pakistan, *Population Census, 1961.* (Karachi: Manager of Publications.)

[2] Planning Commission, Government of Pakistan, *Revised Second Five Year Plan.* (Karachi: Manager of Publications, 1962.)

[3] Planning Commission. Government of Pakistan, Unpublished records of Industries and Commerce Section.

plan period, this would result in an addition of almost four million persons to the 1961 urban population of 2.6 million (assuming an overall population growth rate of 2.6 per cent per year). If the province were to attempt to achieve by 1971 the same ratio between urban and rural populations as obtained in 1961 in the West Wing, the number of city dwellers would increase by 12.1 million. This would mean an increase of 465 per cent in 10 years or a compound annual growth rate of a little more than 18 per cent. The actual rate of urban growth may turn out to be closer to the lower than to the higher figure; but it will, in any case, place tremendous new burdens on the facilities and services of those towns and cities around which such growth will be concentrated.

According to the 1961 Census, in East Pakistan there were only four cities (counting Dacca and Narayanganj separately) having population of more than 100,000 each; only nine cities had population over 50,000 each; and only 24 towns and cities with population over 25,000 persons each. In the preceding decade, the rate of growth of these 24 towns and cities had been very uneven. Not only are there few cities of significant size in East Pakistan, but virtually all urban expansion is taking place in less than ten towns that are growing faster than the overall population[4].

Whether this pattern will persist is, to a large extent, contingent on government policy. To illustrate this point, the growth of the city of Khulna, whose population increased by 203 per cent during the period from 1951 to 1961, was a direct result of government decisions to develop Chalna anchorage and to locate a shipyard, jute and newsprint mills in Khulna. Not all provincial towns are as favourably situated as Khulna, but a substantial number of them enjoy sufficient locational advantage to sustain major industrial complexes. Should the government fail to take the initiative in channeling the industrial and urban growth over a substantial number of towns in different parts of the province the result will not only be a failure to extend industrialization beyond its present geographical limits but also a virtual inundation of Dacca and Chittagong in the rising tide of industrial job-seekers and their dependents.

III. INDUSTRIAL LAND REQUIREMENTS

In both the Chittagong and Dacca areas, it now frequently takes as long as a year and sometimes two years or more to obtain suitable industrial land. In most other parts of the province, land having the necessary services and

[4] Some questions may be raised about the validity of these figures as measures of urban growth. In a number of cases, recent expansion has taken place outside the narrowly drawn municipal boundaries and is not reflected in the Census. In other cases, surrounding rural villages have become the dormitories for urban industrial workers and their families. Further study is needed of these and other possible explanations of the exceptionally slow growth of urban areas in East Pakistan.

infrastructure to permit economic industrial operations does not exist at all. Although additional industrial land will soon be available in Dacca, Chittagong and Khulna, it is doubtful if it will be sufficient even to meet the industrial requirements in these cities for the balance of the second-plan period. The prospects of meeting the land requirements as envisaged in the Third Plan under existing policies and procedures are very dim. While precise figures on the size and composition of the third-plan industrial investment in East Pakistan will not be known for some time, it seems not unreasonable to assume that the final figures might be of the order of Rs. 600 crore. This would entail a tripling of the outlays on industry as compared with the preceding plan period. It would also imply an approximate tripling of industrial land-requirements.

The projected Rs. 600-crore industrial investment programme may be expected to be a relatively capital-intensive one aimed at exploiting indigenous raw materials, expanding exports and building up producer-goods industries to lessen the province's dependence on imported equipment and materials. Much of the plant and equipment required for these purposes will be of a relatively large scale, will need considerable land in areas where industrial services and facilities are readily available, and will have to be served by good transport facilities. Unfortunately, it has not been possible to derive dependable figures on the land requirements of various categories of industries. The amount of investment per acre varies widely from industry group to industry group and from plant to plant within a single industry group. For purposes of calculation, an investment of Rs. 5 lakhs per acre of land used for purely industrial purposes has been assumed here[5]. Hence, if third-plan investment in industrial plant and equipment should amount to only Rs. 480 crore instead of the Rs. 600 crore mentioned above, the land requirements of this investment would come to 9,600 acres. This figure should be raised by about 30 per cent to provide for roads, railway sidings, utilities and other facilities directly serving the manufacturing facilities. This brings the third-plan requiremet for industrial land to 12,500 acres, or an average of 2,500 acres per year. These totals are exclusive of land requirements for labour quarters, staff housing and the multifarious urban land-requirements associated with industrial growth.

In an attempt to gain a little greater precision in measuring the amount of urbanization which may be expected under the Third Plan, and the land requirements which will accompany it, a projection of urban employment-figures has

5 This figure represents a personal judgment derived from a study of the plant outlays and land requirements of: *i*) all PIDC plants in East Pakistan, and *ii*) all PICIC-assisted plants in both East and West Pakistan from 1957 to 1963. Since landuses vary widely between different industrial categories and even within them, the investment-land ratio suggested here will have little validity for individual plants. This ratio will also be too low for industries located on high-cost land in congested urban areas.

The trend of industrial location in East Pakistan has been in the direction of greater and greater concentration in two urban areas, Dacca-Narayanganj and Chittagong. Of the 119 private-sector industrial projects sanctioned for the second-plan period, 35 (or almost 30 per cent) are to be located in Greater Dacca; an equal number will be established in Chittagong; and the remaining 49 are to be distributed in the other 15 districts of the province[8]. These numbers probably understate the true extent of geographical concentration, since the majority of the bigger industrial projects will also be located in the two major cities. As a result of conscious policy, the location of factories established by the PIDC has shown a wider geographical dispersion. Many of these plants have been situated close to sources of raw materials, but the relative isolation of some of them has resulted in substantial increases in capital and operating costs. The factors leading to the grouping of industries in Dacca and Chittagong are the inherent advantages of urban over rural locations, the heavy dependence of many industries on imported raw materials and equipment, and the importance of access to the officials who operate the control and licensing machinery of the government[9]. With the exception of raw-material-oriented industries like sugar, paper, and fertilizers, most manufacturing plants can operate more cheaply and efficiently, at present, in Dacca and Chittagong (and perhaps Khulna) than anywhere else in East Pakistan. This is not an inevitable situation that must be accepted for all times but one that can be altered by the process of development and by appropriate government measures. Although there are a number of industries (*e.g.*, steel-making) that must be situated at seaports, a majority of the types of industries likely to be established in East Pakistan can be operated competitively in a variety of locations, given the necessary facilities.

---

8 Information obtained from the Department of Industries, Government of East Pakistan, March 1963.

9 The principles of industrial location and the major factors which bear on location have been discussed in some detail in: John C. Eddison, "Industrial Location and Physical Planning in Pakistan", *Pakistan Development Review*, Vol. I, No. 1, Summer 1961. In this article it was pointed out that, for most types of manufacturing, location, in an industrialized urban area is much more economical than location in rural areas. This is especially true in the less developed countries. As an alternative to the overconcentration of new industries in a small number of very large cities, it was recommended that government authorities plan and develop secondary or regional industrial centres in appropriate locations throughout the country. These centres would spread the benefits of industrialization without sacrificing the cost advantages of urban operations.

Following Dacca-Narayanganj and Chittagong, the City of Khulna offers the most promising location for rapid industrial growth in East Pakistan. It enjoys a port site and a substantial core of existing industries. It is the third largest urban area in the province and is already being systematically developed according to a preliminary master plan by the Khulna Development Authority.

The four towns of Comilla, Brahmanbaria, Bhairab Bazar and Narsinghdi all share the strategic assets of being close to the large natural gas field at Titas and of lying along the routes of the pipelines which will link this field with Dacca and Chittagong by 1965 and 1966/67 respectively. They also lie along the Dacca to Chittagong railway line and will soon have good road connections with both of these important cities. All of them can, therefore, offer attractive sites for fertilizer, petro-chemical and other natural gas-using industries. Comilla and Brahmanbaria both are situated in heavily populated Comilla District which has practically no industry at the present time. Bhairab Bazar and Narsinghdi have favourable locations for water transport, while the Narsinghdi-Ghorasal area has an industrial nucleus of three jute mills. Since all four of these towns are located fairly close together, it may be necessary in the first instance to limit selection to only two or three of them for immediate development.

The other five towns on the list have been chosen as logical locations for industrial centres of a regional character. Barisal is the fourth largest city in the province and the only one of any size in its south, central region. It is a major inland port but has been declining in population owing to its lack of employment opportunities and its poor land communications. Barisal will soon be connected with the primary highway of the province but it will requir substantial investments in land and power development before it can become an industrial centre. Mymensingh, a regional trading centre and the only major town in East Pakistan's largest district and also the site of the Agricultural University, lacks adequate transport and power facilities for supporting industrial growth. As it will soon be served by improved roads and power facilities, it could become a centre of agriculturally oriented industries and of plants designed to utilize nearby deposits of high-grade clay.

The natural resources in Sylhet District can support a substantial number of industries including fertilizer, cement, glass, ceramics and petro-chemical, paper and board-making, and tea processing. Although these industries cannot be concentrated in a single location, their regional grouping should permit the establishment at Sylhet, Chhatak or Fenchuganj of a further group of industries in related lines of production.

In Rajshahi Division, which is still relatively isolated by poor roads and wide rivers from the rest of East Pakistan, there are no obviously superior loca-

tions for new industrial centres. There are seven or eight towns which might reasonably lay claim to being chosen for special consideration on the basis of size, communications, location or existing facilities. Of these, Rajshahi and Bogra have been tentatively named here. Rajshahi has the advantages of being the largest town, the divisional headquarter, the site of an engineering college, and relatively accessible to Dacca and Khulna. Bogra's greatest advantage is that it already has a nucleus of flourishing factories which may be expected to expand and to attract other industries. Road communications are being rapidly improved in Rajshahi Division, and present power shortages should be overcome in three to four years.

The suggestion that some or all of these towns should be singled out for accelerated industrial development does not mean that industrialists should be discouraged from setting up plants in other towns. It does mean that the government should give a high priority to developing industrial and urban land and to providing essential services and facilities in the proposed secondary centres so that they may effectively compete with Dacca and Chittagong as sites for new factories.

VI. THE LAND DEVELOPMENT PROBLEM

The reason for laying such stress on land development is that, in East Pakistan, the unsuitability of most land for industrial or urban uses constitutes a serious barrier to progress. To begin with, good land is scarce and costly, since most of it is under cultivation. Cultivators are reluctant to sell their land except for very high prices, because it is expensive and difficult for them to find equivalent land elsewhere. It is said that few of the cultivators whose land is requisitioned by the government manage to obtain equivalent land for the compensation which they have been paid.

In addition to being scarce, most land in East Pakistan is low-lying and subject to annual flooding. This makes it unsuitable for urban or industrial use without extensive filling. The cost of filling, sometimes to a depth of 15 feet, is generally very high. The traditional method of obtaining fill is by tank making. To raise one part of a low-lying field, earth is scooped out of an adjacent part and carried by head baskets to the area to be filled. This means that for every acre which is raised, an approximately equivalent piece of land is converted into a pond or tank. In rural areas, the tanks may be used for water storage and fish production, but in towns and cities they constitute a costly waste of valuable land[11]. The alternative to tank making in filling low land is to bring in the fill

[11] In certain cases, where the excavation is not too deep, the land may actually be improved for rice cultivation by being lowered. However, such cases are all too rare to affect the conclusion that land excavation is generally expensive and wasteful.

from where it is not needed. This is being done in a number of locations by the combined use of trucks, country boats, head baskets and manual labour, but the cost is generally high. A far better approach, where feasible, is to obtain fill by dredging it from adjacent waterways and swamps.

Although dredgers have been in service in East Pakistan for many years, little progress has been made to-date in reclaiming low land by using them. This fact becomes understandable when it is realized that, until recently, there has been no large-scale demand for urban land filling, and hence a dredger operation had not been developed to meet this need. What is more, the existing dredgers have not had deep enough ladders to work effectively during the high-water season and have not had sufficient power to pump the fill to the height or over the distance required for reclamation purposes. Most of the land filling which has been done to-date by the government's dredger fleet has been a by-product of dredging for navigational or flood-control purposes. Even where dredging has been used primarily for land reclamation, it has tended to be relatively costly owing to the small scale of the operations and to the inadequate design of the dredgers.

The prospects for low-cost land-filling by dredging have recently been greatly improved. The East Pakistan Water and Power Development Authority (EP-WAPDA) Dredger Operation has already acquired three additional dredgers and is expecting delivery of a new, high-powered dredger, especially suitable for land reclamation, by October 1964. Existing dredgers are being remodeled to enable them to operate to depths of 35 feet, and the operations of the entire dredger fleet are being reorganized to achieve a much higher rate of utilization of equipment, with consequent reductions in costs. The officers in-charge of the Dredger Operation expect to be able to cut their recent operating costs by half and to be able to provide fill at less than Re. 1·00 per cubic yard in the near future. However, to achieve this cost reduction they must be able to count on a sufficient volume of work to be able to use their equipment at close to its rated capacity[12].

VII. COMPARATIVE COST OF LAND RAISING

It is difficult to obtain dependable and comparable data on the cost of land reclamation by the various methods employed in the province. Factors such as depth of fill, nearness of hills or other sources of material, costs of labour and transport, and the size of the job to be done all affect the economics of alternative methods in different locations. In those parts of the province which are on relatively high ground (*e.g.*, North Bengal), what little filling is needed

[12] Information on dredging was obtained from interviews in March 1963 with officers of the EP-WAPDA Dredger Operation.

can be done by the most convenient method at hand. In hilly areas, such as parts of Chittagong and Sylhet, the most economic land-raising may be by levelling hills, using combinations of manual labour and mechanical equipment. Even in the low-lying regions which make up most of the province, there are sections of higher land which can be made suitable for building sites with little investment. However, in most of the towns which are best situated for future industrial development, the land is low and must be raised by an amount ranging from three to fifteen feet. If this land is raised in small isolated segments, the cost of filling will be high, regardless of the method used. If the filling is done on a fairly large scale and the area is adjacent to a water channel, the costs of land development can be drastically reduced by dredging fill from the waterway[13]. In many cases it may also be economical to stockpile dredged fill and to move it back by truck to points which cannot be reached by pumping.

According to rough estimates obtained from government sources in Dacca the costs of filling the riverine land between Dacca and Nārayanganj by three different methods are approximately as follows:

Method of filling	*Cost/cu. yd.* (.....in rupees.....)	*Cost/acre 10 ft. deep* (.....in rupees.....)
a) Dredging from river	0.9—1.0	14,500—16,000
b) Manual filling from river, using trucks and country boats	2.5—3.5	40,000—56,000
c) Tank-making using head baskets	1.4	22,500

It can be seen from these figures that dredging offers a large cost-advantage over the manual method of filling from the river. The costs shown for the alternative of filling by tank making are only applicable to very small plots in which hauling distances are negligible. What is more, the indicated cost figure of Rs. 22,500 per acre understates the true cost, since it does not include the value of the adjacent land which is excavated and made relatively useless. The fact that land is now being filled in the Dacca-Narayanganj area by high-cost, manual

[13] Substantial additional benefits in terms of improved navigation and flood control may also be obtained in conjunction with dredging for land reclamation and *vice versa*. Wherever possible, these joint benefits should be exploited. However, in the cost comparisons immediately below, the full cost of dredging has been allocated to land filling only.

methods indicates the high value which industrialists place on filled land in this area. If the filling were to be done by dredging, it would be possible both to reduce the cost of land to the industrialist and to realize for the government some capital appreciation per acre. This capital gain could, in turn, be ploughed back into further development.

The foregoing cost comparisons have been made in terms of existing prices for the relevant inputs. These prices probably understate the real costs of capital and of foreign exchange and overvalue the cost of unskilled labour. In view of the surplus labour in East Pakistan, preference must be given to the use of labour-intensive methods of land filling wherever such methods can accomplish the desired results without excessive increases in money costs. In the absence of a systematic and widely accepted determination of shadow prices for the factors of production, decisions as to how far labour can economically be substituted for capital must remain a matter of personal judgment. However, it is believed that there is substantial scope for combining the various known methods of land filling in ways that will expand employment without adding significantly to costs.

VIII. THE PRICE OF INDUSTRIAL LAND

The high and rising cost of industrial land in the Dacca and Chittagong areas provides both evidence of present scarcities and warning of more critical shortages to come unless remedial action is soon taken. Land in the Tejgaon Estate just north of Dacca which sold for Rs. 12,000 per acre less than ten years ago is now reported to cost up to Rs. 150,000 per acre. Land on the Dacca-Narayanganj road is being bought and developed at an overall cost of Rs. 50,000 or more per acre. Developed land in the Tongi Industrial Estate, about 15 miles north of Dacca, was initially priced at Rs. 54,000 per acre by the Dacca Improvement Trust (D.I.T.) but, after protracted bargaining, the price has recently been brought down to Rs. 42,500 per acre. Industrial land in Chittagong is priced at around Rs. 45,000 per acre. Good residential and commercial land in Chittagong brings much higher price.

The cost components of these land prices vary considerably from place to place. Agricultural land in the Dacca and Chittagong areas is usually priced at Rs. 2,000—5,000 per acre. The margin between these prices and those cited above is composed of filling costs, improvement costs, and the scarcity value of the limited amount of land suitable for current industrial use. Along the Dacca-Narayanganj road from two-thirds to four-fifths of the cost is attributable to the extensive amount of filling which must be done. In the Tongi Estate the margin of Rs. 38,000 between the purchase cost of unimproved land and the sale price of industrial plots is understood to be divided on about a 60-40 basis between

filling costs and other improvements. The largest element in the "other improvements" component is the cost of road construction and of the wide swaths of improved land given over to road and highway rights-of-way. Other significant cost elements include water supply, street lighting, sewerage, storm drainage, and interest on loans. In Chittagong where only 2-3 feet of fill is required to convert agricultural land, the cost of land improvement is Rs. 15,000—20,000 per acre but the sale price of strategically situated, unimproved land has risen to Rs. 25,000 per acre and up.

It is not possible to make direct comparisons between industrial land costs in Dacca and Chittagong and those in other towns of East Pakistan since, apart from Khulna, there are at present no other towns that can provide land having the infrastructure and services essential to competitive industrial operation. The cost of unimproved land acquired for the Khulna industrial estate was Rs. 6,000 per acre but, after improvement, its sale price has been placed at Rs. 46,000. By contrast, in several of the district headquarters in which small industrial estates are now being established and where unimproved land costs are between Rs. 1,000 and Rs. 2,000 per acre, the sale price per acre of developed land has been calculated at Rs. 25,000.

The high cost of improved industrial land has been the subject of much protest by manufacturers in East Pakistan. They contend that government organizations spend excessive amounts of money on land development and insist that they could do the job much more cheaply. There is undoubtedly some truth in what they say, especially when viewed in terms of private as opposed to social costs. Given their choice, private investors would requisition land, with government assistance, along existing highways and pay agricultural prices for it. They would fill this land in individual, isolated plots, use the existing roads, and expect to be supplied by government agencies with the necessary utilities. This type of "ribbon development" is less costly to the individual investor, especially in the short run, but it generally leads to wasteful use of land, to higher costs of providing transport, utilities and services, and to traffic bottlenecks in future. While land development by the private sector may involve a number of hidden costs, it is often more efficient than development by public authorities and must play an important role in future urban growth. What is needed is better planning and closer coordination of private and public land-improvement efforts. This, in turn, implies greater participation by the private sector in the planning of industrial estates and of urban development.

The proposals for establishing industrial estates have been aimed at facilitating industrial growth through the provision of suitable land. However, as has been noted, the cost of land in these estates is now very high and must be subs-

tantially reduced to avoid imposing a serious burden on industrial development, which is still in a fledgling state in East Pakistan. If the rule-of-thumb ratio, cited earlier, of fixed capital investment of Rs. 500,000 per acre of industrial land, is a valid one, then land costing Rs. 50,000 or more per acre will add at least 10 per cent to the cost of fixed assets. The cost of land in West Pakistan tends to be much lower. In the large industrial estates being established at Gujranwala, Multan, Sialkot, *etc.*, unimproved land purchased for Rs. 1,000—2,600 per acre is to be sold for Rs. 4,000 per acre or leased at very modest rentals. In Karachi however where land is scarce and conditions for industrial success are optimal, prices even higher than those in Dacca prevail.

The sale prices of improved land in Dacca and Chittagong are based on cost formulae evolved by the development authorities. These formulae are designed to cover all of the costs of procurement, development and distribution of land and to enable the authorities to operate on a "no-profit-no-loss" basis. Included under development costs, in certain cases, are the costs of those sections of major provincial highways which happen to traverse the industrial areas in question. Although this practice may facilitate the financing of parts of a modern provincial road network, it also has the effect of inflating the costs of industrial land development. Suggested ways to reduce the costs of industrial and urban land in East Pakistan are: *i*) to requisition and develop large tracts of land in eight or ten secondary towns where healthy industrial growth can take place and where land costs are still low; *ii*) to locate these tracts, where possible, adjacent to waterways and to raise the land with dredged fill; and *iii*) to keep the initial cost of land development to a minimum by eliminating nonessential facilities and by holding down the investment in highways and public rights-of-way.

The cost-formula approach to land pricing takes into account only the supply aspect of economic pricing policy. Since demand substantially exceeds supply at formula prices, it has become necessary to ration industrial land. The inevitable consequences of this situation are the subsidizing of those who obtain land at less than its free market value and the encouragement of speculation and corruption, respectively, on the part of those who are buying and distributing the land. If the land were to be sold at open auction, these ills would be largely eliminated and the development authorities would realize the difference between cost and market value. However the disadvantages of such a procedure could be: the slowing-down of industrial investment, the inability of the less affluent to purchase improved industrial land and, hence, a reduction in the number of potential investors and entrepreneurs.

IX. THE INVESTMENT IN LAND DEVELOPMENT

It has been suggested earlier in this paper that the direct-use land requirements for industries to be established under the Third Plan will be of the order

of 12,500 acres. It has also been estimated that the urban growth that will follow close on the heels of third-plan industrial expansion will require a minimum of around 64,600 acres of developed land for residential, commercial and public uses. This latter figure will rise to about 82,500 acres if account is taken of the expected impact of the industrial investment in the last three years of the Second Plan. The prior estimate of industrial land needs will also rise, on the assumption that a proportion of the land required for the second-plan investment programme has not yet been acquired. If, as seems likely, this proportion is as high as one-third, then the total figure for industrial land will be of the order of 14,000 acres. The separate identity of industrial and of nonindustrial land requirements has been maintained since these two differ both qualitatively and in the matter of timing. The initial demand for industrial land in a particular location will precede by several years many of the other requirements for urban land. The former must be available before plants can be built, but the land needs of housing, commerce and public facilities are generated to a considerable extent, after the new industry comes into operation. However, to minimize inflation of land prices and to capture for the public the betterment in land values resulting from the development of new industrial areas, it will probably be necessary to reserve, several years in advance, much of the land which is later to be acquired for urban expansion.

On the basis of the foregoing calculations and assumptions, it may be projected that, for the period from 1963/64 to 1969/70, 2,000—2,500 acres of industrial land and 12,000—14,000 acres of other urban land will have to be developed each year. Fortunately, not all of this land will entail major improvement charges and much of it will not need to be raised more than a few feet. If the average cost of acquisition and development can be kept down to Rs. 15,000 per acre, this will mean an average annual investment of Rs. 21-23 crore for this period. Although this figure may seem high, it should be noted that it will involve very little foreign exchange and that most of the investment will be recovered for the government through sale or rental of the improved land. A figure of Rs. 15,000 per acre for developed land will only be possible if the initial cost of the land is low. If unimproved land can be obtained for Rs. 2,000 per acre in the proposed secondary centre , the annual outlay for land acquisition will be of the order of Rs. 4-5 million for industrial land and Rs. 24-28 million for other urban land. If it were necessary to pay prevailing Chittagong prices for such land, these totals would be more than ten times as large and the investment would become prohibitive.

Even if land costs are kept to a minimum, the financing of land development will entail some problems. The present high costs and short payment-periods for industrial land impose a relatively heavy burden on the less wealthy industrial

investors. To reduce the handicap to the smaller manufacturers, hire-purchase arrangements might be worked out on a 1-15 year basis. Substantial sums of money will be needed initially to purchase, improve and "stockpile" good urban and industrial land. Because it is usually cheaper to fill and improve land in large blocks rather than small ones and in a single project rather than in several lesser ones, land in particular localities will be developed somewhat in advance of the need for it. Because land is not homogeneous and because purchaser's requirements are often specific to particular kinds of land having certain characteristics or facilities, it will not be practicable to dispose of land as soon as it is improved. It will be necessary, instead, to accumulate various types of land in different locations and to sell it off gradually. This approach may tie up funds for several years, especially if hire-purchase arrangements are used.

It is believed that, with effective planning and promotion, the average time of turnover of industrial land should be no more than two-and-a-half years between the date of purchase of unimproved land and the date of sale of industrial plots. If 2,500 acres were to be acquired each year, this would mean that no more than 6,250 acres would be held by the developing agencies at any time. If the average value of this in various stages of improvement is Rs. 12,000 per acre, then the maximum amount of funds tied up in industrial land would be Rs. 7.5 crore. On the basis of similar assumptions, and taking annual requirements for nonindustrial urban land at 13,000 acres per year, the maximum commitment of funds for such land at any one time would work out to Rs. 39 crore. This figure and the preceding one for funds tied up in industrial land would, of course, be significantly higher if the land were to be distributed through long-term, hire-purchase arrangements.

It should be noted that these estimates refer only to the basic development costs of the land, including filling, drainage, and a modest road network. They do not include the cost of power, water and sewerage, gas pipeline or major highways. These would have to be financed separately. There seems little doubt that, as long as improvement costs are kept within reason by avoiding excessive overheads and employing economical methods of land filling, the land development programme can become self-financing once the investment levels calculated above have been reached. In a number of areas it may be possible to achieve some of the land-improvement targets through the provincial works programme and thereby reduce improvement costs.

X. AGENCIES FOR LAND DEVELOPMENT

Given the estimated size of the job to be done, the question arises as to who is to do it. The answer differs as between the three major cities and the rest of

the province. In Greater Dacca, Chittagong and Khulna, the Development Authorities (Improvement Trusts) are the obvious choices for the assignment. There are no development authorities in the smaller cities or towns and there is, at present, no department or agency of the government which can perform for these smaller urban areas the essential services which the existing development authorities carry out in their respective cities. In view of the scarcity of town planners, engineers and persons with experience in urban development, and in light of the relative weakness of local and municipal government throughout the province, it does not appear feasible at this stage to set up a host of separate, local development authorities to plan and implement land acquisition and improvement in each of the proposed new industrial centres. The best alternative appears to be to get the job done through the joint efforts of appropriate provincial agencies and of the local bodies concerned. This alternative will be feasible only if certain changes are made within the provincial government organization.

The provincial government has the power, through a variety of development agencies and through its licensing and control machinery to determine, to a very large extent, which industrial units or combinations shall be established where. What it lacks are: *i*) a clearly worked-out locational and regional development strategy; *ii*) a sufficient number of existing industrial areas which offer economically acceptable alternatives to location in the big cities; and *iii*) an effective instrument for developing such alternative locations, *i.e.*, a single agency having both the staff and the authority to assist the appropriate local bodies in the initiation, planning and implementation of urban development programmes.

The existing structure of the Government of East Pakistan does not lend itself easily to providing the necessary administrative machinery for industrial and urban land development. Although there are many agencies concerned with particular aspects of this work, no one of them is the obvious instrument for providing a unified approach to it. There are two basic functions to be performed: *i*) determination of policy with respect to the location of industrial investments and other economic activities in the province; and *ii*) procuring, improving and reselling land on the basis of systematic planning for industrial and urban development.

The policy-making function, which must take account of political and social as well as economic and technical factors, should ultimately be handled at the ministerial level. However, to provide guidance and coordination at the secretarial level there should probably be established an urban development committee on which the major interests concerned are represented.

The implementation function could be performed through a number of alternative arrangements. However, it would probably be best to consolidate responsibility for developing both industrial and nonindustrial land in a single agency. Since there is no existing agency or department in the provincial government which is appropriately structured, oriented or staffed to perform all of these necessary functions, it is suggested that a new organization, especially designed for urban land development, be set up. To achieve this objective the establishment of an East Pakistan Urban Development Authority should be considered.

Needless to say, the creation and staffing of a new Development Authority would not of itself solve the land-development problem. The effectiveness of such an Authority would be largely dependent on the cooperation and support which it is able to obtain from other provincial agencies, and most especially from district councils and municipal committees. These latter organizations would have to take upon themselves much of the initiative for getting land-development projects started and for expediting the acquisition of land, as well as much of the responsibility for seeing to the honest and efficient implementation of the development projects. The provincial authorities might have to amend the existing land-acquisition laws so as to reduce the time it takes to acquire land for development. Amendments could probably also be made in the income-tax laws to provide persuasive tax inducements for industrial location outside of the two major cities of the province.

XI. CONCLUSION

Preliminary estimates of the size and composition of the Third Five Year Plan indicate that an industrial investment of the order of Rs. 600 crore may be expected in East Pakistan during the third-plan period. To this amount may be added Rs. 100 crore of investment likely to be made during the last two years of the Second Plan. If industrial investments of this magnitude are in fact made, they may be expected to alter drastically the structure of the provincial economy and the sizes of provincial towns and cities. More than a million-and-a-half urban jobs will be created and there will be approximately eight million new city-dwellers, or about three times as many as there are today.

To make this growth feasible, bold and unprecedented measures will have to be taken by the provincial government. A strategy of industrial location and regional development will have to be formulated. Agencies for policy-making and implementation in the field of urban land-development must be established. Administrative and legal machinery must be set up, and the necessary funds allocated, for the acquisition and improvement of 2,000—2,500 acres of industrial land and of 12,000—14,000 acres of other urban land each year, beginning

as soon as possible. Regional and town planning should be given high priority so as to encourage healthy urban growth, rational geographic distribution of development, and complementarity in the investment decisions of various government agencies.

In the absence of such steps, industrial growth and urbanization will certainly take place, but their pace will be slower, their costs will be higher, and the social and political problems following in their wake will be far more troublesome. With the present low levels of industrialization and urbanization in the province, the opportunities and choices for future development programmes are broad and challenging. The alternative to seizing these opportunities could easily be a duplication of the urban squalor and chaos which are now associated with the name of Calcutta.